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ECONOMICS AND SOCIAL INSTITUTIONS

Volume V

POPULATION
RESOURCES
AND
TRADE

by

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PREFACE

THIS book portrays, in a world-wide setting, the problems that relate to the growth of population and the utilization of the world's natural resources. In recent years the improvement of statistical methods, as applied to population studies, and the careful analysis of population data, have put the population problem in a new setting. Recognition that population growth is not inevitable and that actual trends are toward stability in numbers, or actual decline, has served to shift attention to questions of differential growth or decline in population as between nations, or as between ethnic, economic, and social groups within nations. Moreover, significant changes in the age composition of the population affect not only trends of birth and death rates but also social and economic conditions. The study of population thus leads into a broad analysis of social forces and economic trends.

Recent scholarly investigation has also stressed the close relationship between population problems and international trade, inasmuch as both are fundamentally related to the uneven distribution of human and material resources among rival nations. Specialization and international trade constitute a rational alternative to the migration of population in search of improved economic opportunities. Looked at from this viewpoint, the population problem exemplifies, on a world-wide scale, the disproportionality in the factors of produc-

tion — capital, labor, and natural resources. The problem consists, not in a shortage of land and natural resources in the world as a whole, but in the failure to attain maximum productivity because of the inequality in the distribution of the factors of production.

Nationalism, natural barriers, and artificial obstacles to trade prevent a full acquisition of the benefits of comparative advantage and specialization. Obviously, the attainment of better proportioning involves not only economic and social but also highly important political considerations. The authors of this book have presented primarily the economic and social phases of the problem but they have given it a realistic discussion in view of the fact that the world appears to be committed to political policies of national self-sufficiency. Especially do the commercial policies adopted by important nations affect vitally the prospects for future world peace, and in this book is found a discussion, with particular reference to the United States, of the implications of existing national commercial policies.

The authors wish to acknowledge their indebtedness to certain scholars in the field of population and international trade. The theoretical structure of the volume is based on the contributions of Professor Bertil Ohlin of the College of Commerce, Stockholm, and of E. F. Penrose of the Food Research Institute of Stanford University. To the latter the authors are further indebted for his illuminating criticism of the Malthusian doctrine. The chapters on population trends in the United States have followed, both in organization and content, the work of W. S. Thompson and P. K. Whelp-

ton of the Scripps Foundation for Research in Population Problems, and of F. Lorimer and F. Osborn.

Population, Resources, and Trade is the fifth volume in a six-book series designed to serve, in various combinations, as a text for an introductory course in economics. The first volume gives the student a broad perspective of the development and operation of economic and social institutions. The second volume presents realistic and up-to-date methods of economic analysis based upon important contributions made to economic theory in recent years. The remaining four volumes in the series, constituting a survey of the major problems of the modern economic system, place emphasis not merely on the description of problems but also on the study of underlying economic and social processes. In the third volume, for example, problems relating to the social control of industry are examined with the aid of the methods of economic analysis outlined in Volume II. The fourth volume contains a description of modern financial institutions and a portrayal of the operation of the system of money, banking, and public finance in an era of expanding governmental control. The sixth volume deals with labor organization, labor relations, social security, and social reorganization.

JAMES G. SMITH

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CONTENTS

Preface, v

Introduction, 3

PART ONE · POPULATION AND RESOURCES

I · Population Theories, 23

II · The Growth of World Population, 43

III · The Distribution of World Population, 74

IV · Population in the United States, 91

V · Social and Economic Significance of Population
Changes, 113

VI · Natural Resources, 140

PART TWO · INTERNATIONAL TRADE AND COMMERCIAL POLICY

VII · The Nature of International Economic
Relations, 161

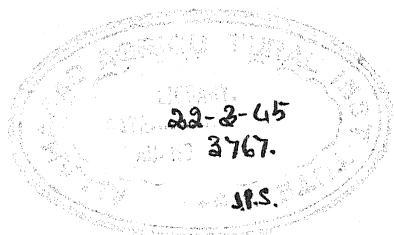
VIII · Theory of International Trade, 174

IX · Monetary Adjustments in International
Trade, 194

X • Instruments of International Commercial
Policy, 212

XI • International Commercial Policy, 229
Index, 277

POPULATION, RESOURCES
AND TRADE



Introduction

INTERDEPENDENCE OF NATIONAL ECONOMIES

A STRIKING fact with respect to the world today is the economic interdependence of nations. To say that no modern nation lives in complete isolation is only to state the obvious. Powerful forces, which it is proposed to survey in this volume, place all nations in close association with other nations and bind them together through countless cultural and economic ties created by the activities of their citizens. Even the United States, which, by virtue of its immense territory, the wealth of its natural resources, and the size of its population, might maintain itself in relative isolation more easily than other nations with fewer natural advantages, is inextricably bound to the world economy. So significant are the relationships among nations, particularly in the economic sphere, that the study of international trade has been long recognized as a separate field of inquiry in the science of economics.

Since every part of the world now depends on every other part, it would appear that complete co-operation in carrying on business is both desirable and necessary. The manufacturing nations need a large and steady supply of a variety of raw materials, many of which can only be obtained from outside their own boundaries. The agricultural countries, in turn, need manufactured goods and markets for the products of farm and plantation. The rapid expansion of the scale of production and the volume of investment in modern equipment exert a heavy pressure on a large industry to maintain continuous operation. As a result, the marketing area must be extended beyond the political boundaries of the manufacturing nation.

The hundred years before the World War witnessed greater economic and social progress than any other known period in the history of mankind. Never before had the standard of living risen so rapidly. In the course of this period, obstructions to the movements of population, of capital, and of commodities were reduced to a minimum. This period stands in sharp contrast to the prohibitions and restrictions of the mercantilist era that preceded it, and to the revival of obstructive policies characteristic of the international economic life of today. It is undeniable that the phenomenal improvement of living standards in the pre-war period was largely due to the relatively free intercourse between nations.

The World's Economic Dilemma. In the period following the World War, the forces of nationalism have been moving in a direction counter to the fundamental

economic interests of the world economy. Since the rise of nationalism in the sixteenth and seventeenth centuries, the world has been divided into political subdivisions each claiming sovereignty over its own territory, and independence from any superior control over its relations with other sovereign powers. But since the days of mercantilism, no nations have erected such barriers against the freedom of trade as prevail at the present time. The World War and the depression of 1930-1933, coupled with the exaggerated growth of national consciousness, have created an economic dilemma in which considerations of a noneconomic character have obscured the fundamental realities of the international economic situation.

A rational international organization in the economic sphere is impossible if the goals pursued by the different nations are divergent or contradictory. The organization of world economy among nations seeking economic self-sufficiency differs greatly from economic organization among nations seeking to raise the social and economic standards of their people. In their domestic policies, all nations strive for an increase in the national per capita income of their citizens, and also give consideration to the distribution of income and to security and stability of employment. In the international sphere, an organization providing a higher standard would be preferred, were it not for the special considerations of a political or military character that give rise to the dilemma referred to in the preceding paragraph.

It has become increasingly apparent since the World War that policies directed toward a larger measure of economic self-sufficiency tend to perpetuate the inequality of economic opportunity between nations, and to promote friction and strife. "Progress toward a more rational economic order cannot be dissociated from progress toward internationalism."¹

MOVEMENT OF THE PRIMARY FACTORS OF PRODUCTION

The material prosperity of a country depends upon the presence in combination of a supply of three factors fundamental to economic life, namely labor, natural resources, and capital. The combination of these factors can be said to have reached an "optimum" position when they are associated together in proportions that result in the maximum production and real income per capita of the population of the country. This conception also includes the gains to be achieved through trade with other countries. A nation may not consume within its own borders the total production of a given commodity. If it can produce such a commodity more cheaply than another country, and demand for the commodity exists among the citizens of that other country, the producing country may export part of its supply of the commodity, in exchange for other goods that it can produce only at greater cost. In this manner international trade serves to increase real income, and the gain to the nations involved is mutual.

¹ Penrose, E. F., *Population Theories and Their Applications* (1934), p. 305

The most superficial survey of international economic organization reveals the fact that there are wealthy nations and poor nations, as exemplified by the wide range of prevailing standards of living. This observation suggests that there are great differences in the endowment of different countries with the primary factors of production. Further investigation reveals that through the play of economic forces there has been a strong tendency to overcome these irregularities by the movement of these primary factors of production from regions or countries where they are most abundant, to those areas where they are scarce relative to other factors. Densely populated countries are exporters of labor. Prosperous industrialized countries are exporters of capital, which is generally reflected in exports of machinery and other productive equipment.

In this volume, dealing with the movement of factors of production and of commodities, it will be more convenient to refer to the three primary factors in terms of "population", "natural resources", and "capital", as respectively the sources from which the supply of labor, of raw materials, and of capital investment are derived. To the movement of population in response to the call of economic opportunity, the term "migration" will be applied. Capital movements refer to the investment of capital in other countries by people in the capital-exporting country. The capital-importing country, in turn, purchases machinery and other productive equipment with the borrowed capital.²

² The capital-exporting country is commonly also an exporter of the machinery and equipment bought by the borrowing country.

Disparity in the Distribution of Population and Resources. The key to the inequality in the economic strength of different nations lies in the fact that the population of the world is unevenly distributed with respect to natural resources. In a sense the population of today represents an accretion from the past. Numbers have increased in rough proportion to the cultural and technical development of society. Prior to the Industrial Revolution soil and other resources, the knowledge of industrial technique, commerce and trade, all played their part in the determination of the population pattern of the peopled regions, even as they do today.

But the development of new techniques introduced by the Industrial Revolution changed the relative importance of different resources. Materials little used or valued in the older societies became the keystone in the arch of the modern economic structure. The discovery of coal and iron, and the utilization of mechanical power, disturbed the existing equilibrium. Many densely populated countries found themselves handicapped by a lack of the natural resources essential to industrial growth in the new order of economic life. On the other hand, many new and relatively empty lands found themselves in possession of potential raw materials beyond the power of their sparse and widely scattered populations to utilize to the fullest extent.

No two countries of the world today have precisely the same endowment of natural resources, and in no two countries of the world is there precisely the same quantitative ratio between population and natural re-

sources. Thus the United States has a widely varied and rich endowment of natural resources, and a relatively small population as compared to these resources. And such countries as Japan and Italy not only have a less varied array of natural resources, but their populations are relatively large compared to the resources available.

Significance of Movements of Productive Factors. The lack of correspondence between the distribution of population and the distribution of resources can in part be corrected by the movement of factors of production between nations. Because of the unit-price differences that arise between the same or similar factors in countries where these factors are relatively abundant or relatively scarce with respect to the prices of other factors, a movement of the factors of production takes place between countries. This movement tends to diminish the inequality of advantage caused by a maldistribution of population with reference to natural resources.

In general, it can be said that such movements represent the migration of labor and the flow of capital to those regions particularly well endowed with natural resources. Natural resources are the least mobile of the three factors. By no stretch of the imagination could England exchange some of her coal mines for the broad pasture lands of Australia. But the former could export labor and capital to the latter, and develop the livestock and wool-growing industries of the younger country, to the mutual benefit of each.

The Migration of Population. The migration of population represents the movement of individuals motivated

by individual observation of the advantages or disadvantages of life in a new community. Governments have played a relatively small role in migration, whether through subsidy, colonization programs, or other means. Migration has taken place in response to the prospect of larger economic opportunity, and consequently has represented a movement from regions of lower remuneration to regions where remuneration is higher. The peopling of North and South America and of the territory of the British self-governing dominions is an illustration in point. Reduced to economic terms, this means that the unit price of labor in countries where labor is abundant is low relative to the other factors. But where labor is scarce relative to natural resources and capital, its productivity is high, and the corresponding real wages are higher than in the country where the labor factor is relatively more abundant. The direction of the movement of the labor factor is from low-wage to high-wage countries.

Under certain conditions the migration of population in large numbers may not be possible unless accompanied by a corresponding movement of capital. In newly developed countries, particularly, the full benefits of an influx of immigrant labor cannot be achieved without the investment of capital for the purchase of industrial equipment and the construction of systems of communication and transportation.

The Flow of Capital. Capital is the most mobile of the factors of production. Although it is usual to speak of the foreign investments of England or the United States, such language should not obscure the fact that

individual owners of capital are responsible for these investments. Each capitalist seeks the best market for his funds, and their investment in enterprise outside the boundaries of the country to which its owners owe allegiance is determined by the fact that the rate of return on such funds is larger than could be expected from investment in domestic industries.³ Differences in the rate of interest provide the stimulus for the export of capital to countries where the rate is high.

Other considerations, however, may influence the judgment of the investor. He may prefer a diversity of investments, and so distribute his funds between domestic and foreign enterprises. Even when there are no marked differences in interest levels, foreign investments may be made where there is a good chance for large profits. This is often a stimulus for investment in new countries. Frequently the spirit of pure speculation tempts willing risk takers to invest in foreign enterprises of which they have only the most superficial knowledge. But in general the principle holds true that the movement is from countries where the capital factor is relatively abundant, and the return low, to countries where this factor is scarce and consequently yields a relatively high return, or at least holds out the prospect of doing so.

As stated above, movements of capital often accompany the movement of population. On the other hand, capital may flow to certain countries without any corresponding movement of population on a large scale.

³ Cf. McIsaac, A. M., and Smith, J. G., *Introduction to Economic Analysis* (1937), pp. 341-343.

This is the case where a given country, such as India, although backward industrially as judged by western standards, is occupied by a large native population. In such a case large investments of capital may be associated with a small but highly significant movement of skilled technical workers to organize and direct the new industries to be developed.

OBSTACLES TO FACTORAL MOVEMENTS

Obstacles to the free movement of labor and capital prevent the attainment throughout the world of the most favorable proportions between the factors. If these obstacles could be removed, equalization of opportunity among all peoples could be accomplished through the redistribution of population or through movements of capital.

Hindrances to Migration of Workers. It would seem, at first thought, that the rapid improvement and cheapening of the means of communication and transportation should have removed many, if not all, of the obstacles to the migration of workers. But the binding power of home ties still remains. To prospective emigrants the risk may seem disproportionate to the gain anticipated. Differences in language and cultural backgrounds, whenever they arise in connection with departure from the homeland, tend to discourage migration. The consideration of climatic differences exerts its influence and, finally, distance, at least to the poor man, has by no means been annihilated by the lower cost of transportation. Extensive migration is always

drawn from the ranks of the poor, and the cost of overcoming distance may well be beyond the reach of the peasant or unskilled worker.

Of greater importance than the natural barriers described above are the artificial barriers against free movements of population that developed especially during the period subsequent to the World War. The natives of certain densely populated areas occupied by the Asiatic races have been almost completely prohibited from immigrating into English-speaking lands. Somewhat later, the depression stimulated a policy of immigration restriction and even exclusion directed against all immigration regardless of its national origin. Today the normal channels for the flow of migration are closed in most countries hitherto receiving immigrants.

Hindrances to the Flow of Capital. Obstacles of various kinds also prevent the free movement of capital. One which might be classed as a "natural" obstacle is the tendency of investors to consider foreign investments more risky than investment at home. Because they know more about the conditions of their own country than about others, they tend to export their capital only if stimulated by a higher yield. Such considerations therefore tend to restrict the export of capital, particularly that part of it controlled by the more conservative investors.

Many states lay special obstacles in the way of an export of capital. Examples of this are heavy stamp duties on foreign security issues, or temporary embargoes on foreign loans.

Factoral Movements as Adaptations to Economic Conditions. The meaning of international labor and capital movements can be more readily appreciated if they are regarded as adaptations to economic conditions.⁴ These movements are due chiefly to international differences in wages and interest. The basic elements of the price system vary in different countries. The quantities and proportions of productive factors differ from country to country. The same is true of transportation equipment. But above all, labor and capital factor movements imply an adaptation to international differences in natural resources. Such movements represent a distribution of labor and capital, regarded as factors of production, so as to correspond to the supply of other factors in other conditions of production. For the sake of emphasis let it be repeated that such an adaptation is only partly achieved by movements of the factors of production. Artificial obstacles have reduced the flow of these factors across national boundaries, and even natural obstacles would be sufficient to prevent a complete adjustment between population and resources.

MOVEMENT OF COMMODITIES IN INTERNATIONAL TRADE

Up to this point the divergence between the distribution of population and the distribution of resources has been considered with reference to the possibility of overcoming this disparity by means of a more efficient combination of productive factors. There is another

⁴ Ohlin, B. G., *Interregional and International Trade* (1933), p. 377

way, however, by which the inequality between population and resources can be reduced.

Trade as a Substitute for the Movement of Factors. "Movements of goods may to a considerable extent be regarded as a substitute for movements of the factors of production."⁵ The meaning of this statement becomes obvious when the nature of commodity movements between countries is understood. Trade indirectly puts foreign productive factors at the disposal of nations importing foreign commodities. Each country specializes in the production and exportation of commodities that contain relatively large quantities of the abundant and cheap productive factors in that country. On the other hand, imports consist chiefly of goods whose production requires relatively large quantities of productive factors that do not exist at all or only in minor quantities in the importing country.

For example, in the illustration of trade between England and Australia, the latter's export to England of meat and wool is indirectly an export of its abundant pasturing lands, whereas England's export to Australia of manufactured goods is in the same indirect way an export of its coal and iron resources. "Thus, the export of goods is really indirectly an export of abundant industrial agents, while the importation of goods means an indirect supply of those productive factors of which the supply is scanty or entirely lacking. The movements of commodities serve to some extent as a substitute for the transfer of primary productive factors, natural resources remaining fixed, while la-

⁵ Penrose, E. F., *op. cit.*, p. 269

bor and capital move only with a certain difficulty.”⁶

Trade relations of this sort are of great help to relatively dense populations living in areas provided with a scanty supply of natural resources. The people of such areas import raw materials from regions of more abundant supply and fabricate them into finished goods, part of which they export. In this manner they share in the land supply of the countries of more abundant resources. The latter, through the imports from manufacturing countries, share in the natural resources, the skilled labor, the effective productive equipment, and the abundant capital supply of the manufacturing countries.

Hindrances to the Movement of Commodities. As in the case of factoral movements, the flow of goods in international trade meets with numerous obstacles. The earliest type of restrictive legislation practiced in the modern era was that of duties on imports, an expression of the commercial doctrine of “protectionism.” In spite of the application of such measures, trade in the course of the nineteenth and early twentieth centuries was reasonably free. But in recent years, and particularly during the period of the 1930-1933 depression, restrictive measures were multiplied, until the very foundation of international economic organization was threatened.

The period 1930-1935 witnessed the proliferation of various trade restrictions never applied before, or if applied, confined within relatively narrow limits. Inas-

⁶ Joint Committee, Carnegie Endowment and International Chamber of Commerce, *International Economic Reconstruction* (1936), Report by Ohlin, B. G., pp. 32-33

much as these restrictions will be discussed in the last chapter of this volume, it will be sufficient to list them here. They include such practices as quota restriction and license systems applied to imports, preferential tariff arrangements, bilateral trade agreements to balance imports and exports from country to country, barter arrangements, and the control of foreign exchange.

The imposition of these trade restrictions represents a change in the aim of commercial policy. The objective is no longer, as before the 1930-1933 depression, chiefly directed toward the protection of industries in the country imposing import duties. It aims, in large measure, at the protection of currencies by regulation of the balance of payments, and at the attainment of national self-sufficiency in certain economic activities considered essential for attack and defense in war. It is hardly an exaggeration to say that international trade itself has become a sort of uncivilized warfare in which, under pressure of considerations of national self-preservation, whether real or fancied, "the rules of war" have been discarded.

Needless to say, such policies nullify the potential gains of multilateral trade, and the world is impoverished thereby. Their effect on political relations scarcely needs emphasis. Discriminatory practices breed ill will and encourage reprisals, and may lead ultimately to the final arbitrament of war. Thus the barriers to trade and the obstacles to the movement of labor and capital reinforce one another, and together prevent the distribution of factors and goods through which the

highest degree of economic welfare can be attained.

The Changing Character of International Trade. Although the movements of factors and of goods are represented as substitutes one for the other, such movements are also mutually supplementary. The migration of labor and the flow of capital led to the rapid growth of industry in the new countries, and therefore to international trade on a larger scale. Even as the volume of this trade increased, its character underwent a change. At the opening of the modern era, trade consisted largely of the export of primary goods — raw materials and foodstuffs — from the new countries, and the import of manufactured goods from the older industrialized countries. In more recent years, however, the proportion of manufactured goods from Europe consumed in the newer countries has declined in comparison with those produced at home. Imports of the overseas countries began to consist more and more of machinery and highly specialized articles.

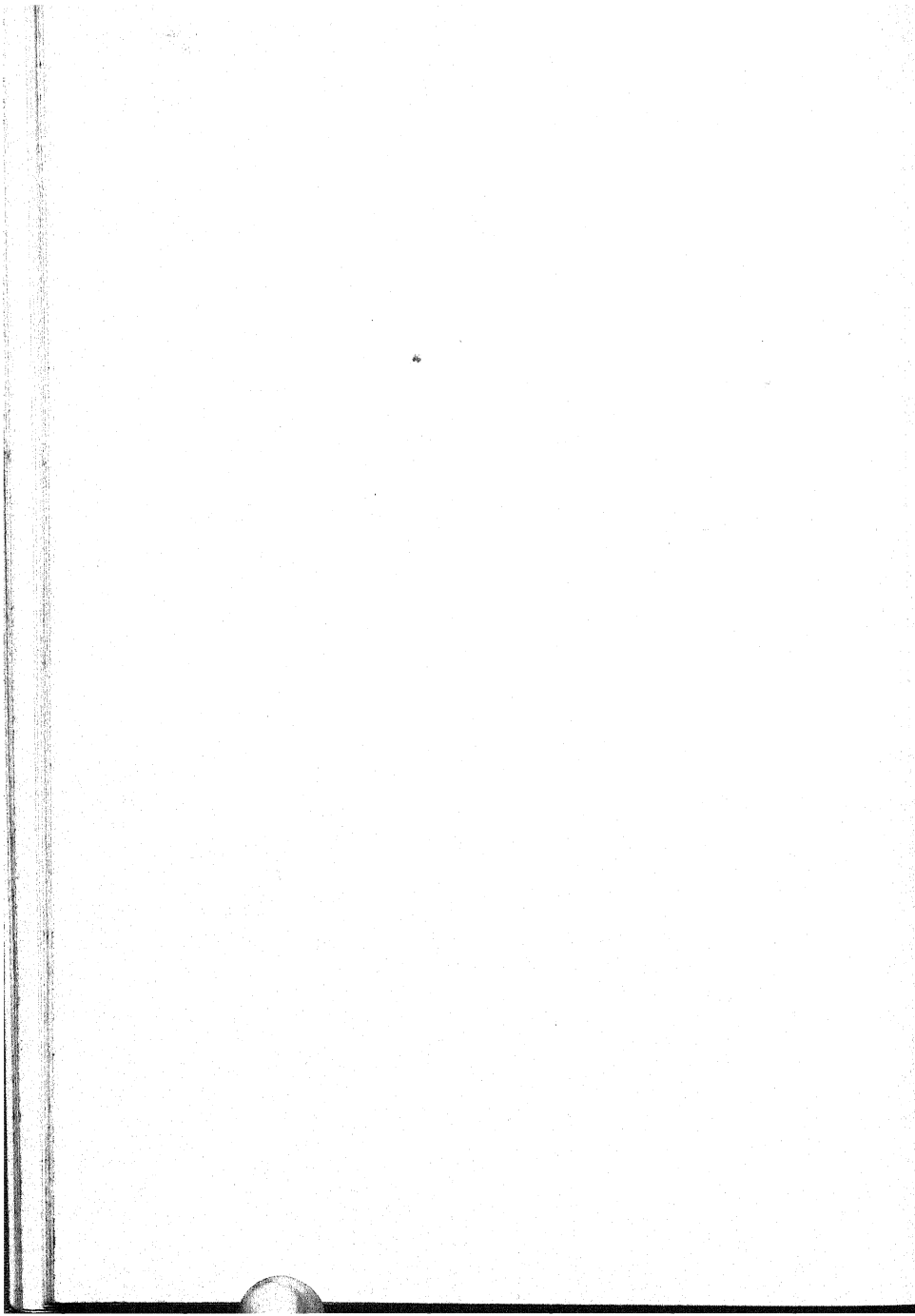
These changes in the character of trade do not imply that the foundation of the world economy has changed.

- It is as firmly established as ever, from the economic
- standpoint, on international specialization and inter-
- dependence. The combination of the movement of productive factors and of commodities, developing contemporaneously during the last hundred years, has given rise to a world economic organization based on a far more effective use of resources, a far more rapid rate of progress and a far higher standard of living, than would otherwise have been possible. The international economic problem with which the world is

faced today must be approached with one chief aim in view, the reorganization of international economic life along lines designed to promote the expansion of trade.

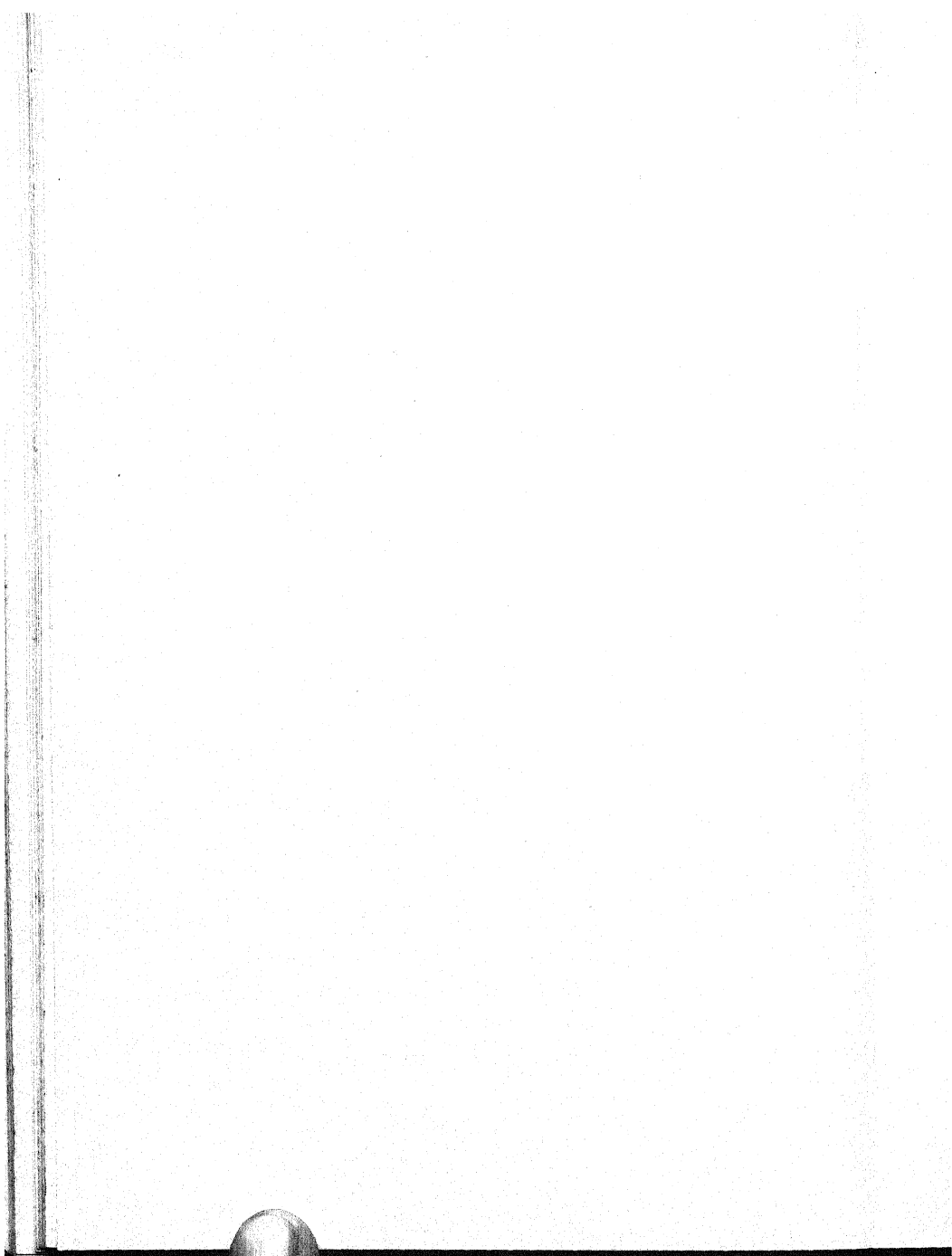
The Subject Matter of the Present Volume. The following chapters will give more detailed consideration to the various elements of international economic life outlined above. Special attention will be given to the extraordinary growth of population in the course of the last century. The magnitude of the increase in numbers, when examined in connection with the advance of science and the revolution in industrial technique, is a dynamic factor that accounts in large measure for the differences between the cultural and economic life of the present era and that of earlier times. Furthermore, the disproportionate rate of growth of the populations of different regions in the past, when coupled with estimates of their rate of growth in the future, is significant in the interpretation of political and economic beliefs and policies governing the action of different nationalities.

The chapters on population are followed by a brief survey of the amount and distribution of natural resources, which will bring into sharper focus the issues connected with the world distribution of resources to which reference has already been made. And finally, the closing chapters contain an analysis of the principles of foreign exchange and international trade.



PART ONE

POPULATION AND RESOURCES



C H A P T E R I

Population Theories

THE POPULATION PROBLEM

IN the modern world the only permanent fact is the fact of change. In no field of economic inquiry is the action of dynamic economic forces so manifest as in the growth of population and its progressive adjustment to the physical environment. The relationship between the three factors — resources, population, and the state of the industrial arts — constitutes the “population problem.” Upon the combination of these factors in the most efficient ways depend the issues of national wealth or national poverty. The significance of the proportionality of these factors to social well-being is evidenced by the fact that they set definite limits to the productive capacity of a nation, and in consequence they determine the volume of the national income available for distribution among its members. From the standpoint of national welfare, the prevailing system of income distribution is a consideration of great importance. Upon it depends the extent to which the

national income derived from the combination of the three primary factors is shared by the various economic groups associated in production.

The study of population raises certain fundamental questions. Is the population large enough to make the fullest use of the known and available resources of the country? Or is it so large that under the existing economic organization, the people cannot all be employed profitably? Assuming the existence of raw materials and a population to be supplied with food and other commodities, what are the means used to convert raw materials into finished products? Has the country reached that stage in the development of the industrial arts where the productivity of its industrial machinery is the most efficient available in the existing stage of scientific and technical knowledge? Is the distribution of the aggregate product among the individuals or classes in the population a just and reasonable one?

MALTHUS AND THE STUDY OF POPULATION

The contribution of Thomas R. Malthus (1766-1834) to the formulation of the principle of population was to stimulate interest in the economic aspect of modern population problems. His *Essay on the Principle of Population*, first published in 1798, went through six editions, the last of which appeared in 1826.

The figure of Malthus casts its shadow over the whole range of population studies down to the period of the World War. His principle of population fur-

nishes the frame of reference within which later study was developed. But when, in the course of time, the framework of the Malthusian analysis proved too narrow in its scope to include all the elements essential to an understanding of recent developments in Western Europe, scholars bred in the Malthusian tradition found it difficult to free themselves from the prepossessions of their early training.

As Malthus himself states in the preface of his *Essay*, the immediate incentive to publication was the desire, aroused by a discussion of the doctrines of William Godwin, to put on paper, in a clearer way than was possible in conversation, his thoughts on the general question of the future improvement of society. Godwin was a philosophical radical, a follower of Condorcet, one of the French school of rationalists that emerged from the intellectual ferment of the French Revolution.

Godwin professed an optimistic creed based on a belief in progress and the perfectibility of man. According to this creed, the source of all evil lies not in human nature itself, but in human institutions, particularly political institutions. Social inequality is the cause of the evils that beset the population; there is no need to dread the laws of nature, providing that the necessary changes are made in the corrupting laws and restrictions created by men. At any rate, the world is so large, and the possibilities of the improvement of cultivation so great, that "myriads of centuries" may pass away and the earth still be found sufficient to feed its inhabitants.

STATEMENT AND INTERPRETATION OF THE MALTHUSIAN DOCTRINE

THE MALTHUSIAN PRINCIPLE OF POPULATION

A recent authority¹ summarizes the Malthusian theory developed in the second and subsequent editions of the *Essay on the Principle of Population* as follows: "... by virtue of the undiminishing impulse and power of reproduction, population, if unrestricted, would increase in geometrical ratio and, according to the experience of the American States, would double itself as often as every twenty-five years. Subsistence, in countries where cultivation is already developed, could not increase more than in an arithmetical ratio. Thus population tends constantly to increase beyond the limits of subsistence and is only restricted by preventive and positive checks, which are all resolvable into moral restraint, vice, and misery. Moral restraint is the sole means of escape from vice and misery; and any project to better society and alleviate want by means which weaken individual responsibility for the exercise of moral restraint serves only to aggravate the evils it seeks to cure." An analysis of the propositions contained in this summary will serve to bring into clearer perspective the meaning that Malthus attached to the population problem, and the assumptions upon which his doctrine was based.

¹Field, J. A., *Essays on Population* (The University of Chicago Press, 1931), Chapter I, p. 1

Relation of Population to Subsistence. According to Malthus, population has a constant tendency to increase beyond the means of subsistence. He says, "through the animal and vegetable kingdoms, nature has scattered the seeds of life abroad with the most profuse and liberal hand. She has been comparatively sparing in the room, and the nourishment necessary to rear them." Under the most favorable circumstances, with ample room for expansion and plentiful supplies of food, population may be expected to double itself every twenty-five years. This conclusion was warranted by the record of population growth in the United States. This rate Malthus accepted as the "utmost power of population."

On the other hand, practical experience pointed conclusively to the fact that subsistence could never increase at this rate. Even in the United States, the population would attain such numbers that all available land would be put into cultivation, and thereafter the capacity of the country to support additional increments would reach a limit. But in the settled countries, where the best land was already cultivated and where the utilization of poorer lands would yield lower returns, it was impossible that the power of subsistence to increase could equal the power of multiplication of the human species. Consequently, a constant pressure of population on subsistence is the inevitable result.

GEOMETRIC AND ARITHMETICAL RATIOS

The relation of population to food supply was expressed by Malthus in the famous ratios. If population, unrestricted by limited food supply, can double in

twenty-five years, and double again in the next twenty-five years, it is obviously increasing in a geometric ratio and can be expressed in the series — 1, 2, 4, 8, 16, 32, etc. But subsistence is not susceptible to such increase. Subsistence increases in an arithmetical progression, expressed by the series — 1, 2, 3, 4, 5, 6, etc.²

Criticism of the Geometric Ratio. This abstract *a priori* conception of the manner in which population increases gave to Malthus' conclusions on this subject the rigidity and universality of a law of nature, and led him to underestimate the host of other factors, social and psychological, that exert a powerful effect upon the maintenance of a rate of growth of population well within the biological possibilities of increase. It is a valid criticism of the geometric ratio to say that it confuses a biological possibility with a human tendency. The important question is not how many children it is biologically possible for a human couple to have, but how many they actually have, under given conditions of their physical and social environment.

Under modern conditions, the physical and social environment affecting the number of children are related to the standard of living and the various social strata of people. It is generally recognized that such a standard is progressive; that is to say, when such increases in wealth and prosperity as occurred in the

² Most commentators agree that the use of the ratios was unfortunate. Malthus evidently was interested in establishing the evidence of a tendency, to be observed everywhere, of population to press upon the means of subsistence. The use of the ratios gave a false precision to the expression of his fundamental position, and diverted subsequent discussion from the underlying issues to the attack and defense of the ratios.

course of the nineteenth century become diffused throughout the population, the limitation of size of the family takes place at a level well above that of the minimum of subsistence. Malthus, on the other hand, believed that population exerts a constant pressure at the minimum level of subsistence.

In the second edition, his statement was somewhat less rigid. He granted that there were some instances where population did not keep up to the level of subsistence. For example, if the increase in the means of subsistence of a particular society had not been distributed to the lower classes, it would give no stimulus to population growth. But this admission did not change in a fundamental way his general position that any increase in the ease of living would be accompanied, not by a higher standard of living, but by an increase in numbers, which would leave the condition of the masses where it was before the increase took place.

Criticism of the Arithmetical Ratio. Thus, the geometric ratio was an *a priori* concept of the propensity of human beings to increase. On the other hand, the arithmetical ratio was an empirical statement of how subsistence, in fact, is supposed to increase. Malthus developed his conception of the arithmetical ratio on two assumptions: first, that the supply of land was limited and, second, that methods of agricultural production would remain relatively static. Neither of these assumptions is justified by the facts. Elasticity in the utilization of land, and the revolutionary contributions of science and invention to methods of agricultural pro-

duction, have resulted in a volume of agricultural output that prevents "the want of food" from playing the melancholy role assigned to it by Malthus. Furthermore, he neglected the significance of the potential increase in subsistence available through international trade.³

Malthus believed that his special contribution to the principle of population was the more detailed study of the means by which population and subsistence were kept in balance. In the first edition he stated that "the superior power of population is repressed, and the actual population kept equal to the means of subsistence, by misery and vice"; whereas in the second edition the checks "are all resolvable into moral restraint, vice, and misery."

The Preventive Checks. The preventive checks are those that limit the growth of population by keeping the number born below the biological maximum; that is, which reduce the birth rate. The only preventive check Malthus recognized as socially desirable was the practice of moral restraint, by which he wishes to "be understood to mean a restraint from marriage from prudential motives, with a conduct strictly moral during the period of this restraint. . . ." This check excluded the use of all the means of limiting the size of the family that are included in birth control as it is understood today. Moral restraint meant, therefore, such a postponement of marriage as to shorten the reproductive period of the wedded pair, which would confine the birth of children to the number that could be properly

³ For further development of this point, see below, pp. 141-148.

supported, even though the fertility of married women should approach the biological maximum at their ages.

The Positive Checks. The positive checks are those that repress an increase already begun, and include all factors that tend to increase the death rate. They ultimately resolve themselves into vice and misery. Those positive checks that appear to arise unavoidably from the laws of nature may be called misery. Such are the natural catastrophes of droughts, floods, earthquakes, diseases and pestilence (assuming them to be beyond human control), and last of all, famine. Those vicissitudes that humanity brings upon itself are classified as vice. Sexual irregularities and other excesses of all kinds come under this heading. Certain other factors affecting the death rate are of a mixed character; such as wars, which originate in the action of human beings, but which bring in their wake all sorts of natural calamities. In any event, whatever their origin, all the positive checks have misery as their consequence.

The ultimate check to population growth, according to the Malthusian doctrine, is a want of food. The immediate scarcity of food will show itself first in the increase of mortality among children and adults due to malnutrition, disease, and premature deaths. As Malthus put it, a man may be said to be confined in a room, even though the walls do not actually press upon him. Nevertheless (the quotation is taken from the first edition), "famine seems to be the last, the most dreadful resource of nature. The power of population is so superior to the power in the earth to produce subsistence for man, that premature death must in some shape or

other visit the human race. The vices of mankind are active and able ministers of depopulation. They are the precursors in the great army of destruction; and often finish the dreadful work themselves. But should they fail in this war of extermination, sickly seasons, epidemics, pestilence, and plague, advance in terrific array, and sweep off their thousands and tens of thousands. Should success be still incomplete; gigantic inevitable famine stalks in the rear, and with one mighty blow, levels the population with the food of the world."

Ineffectiveness of Preventive Checks. It is obvious that, to the precise extent that the preventive checks operate, the positive checks become unnecessary, and humanity escapes the gloomy fate thus predicted for it. But a careful study of the argument, and the total impression of the temper and atmosphere of his later work, leave the reader with the definite conviction that Malthus placed little if any reliance on the operation of the preventive checks. Students of Malthus have struggled to reconcile this profoundly pessimistic viewpoint with the modification of the analysis of the checks contained in the second edition, where the preventive check was added. The addition of the preventive check did not modify to any significant degree the general position adopted in the first edition of the *Essay*, that the superior power of population can be kept in balance with subsistence by the action of the positive checks. The addition of the preventive check was, in short, a counsel of perfection, not to be realized in the state of the contemporary morals of his day, and in the restricted form to which he confined it.

SOCIAL THEORY OF MALTHUS

Malthus sometimes failed to set forth the assumptions upon which his conclusions depended. Scattered throughout his work is the evidence of significant assumptions as to human nature,⁴ and these assumptions have an important bearing upon the development of his doctrine. Thus, Malthus believed that the law of population growth sets a definite limit to the possibilities of human progress. But because of certain innate characteristics of human nature, this law is essential to any progress at all. The prospect of having to support a family is a necessary stimulus to economic activity without which the exertion necessary for productive enterprise would not be exercised. The responsibility of the husband for the maintenance of wife and offspring in a self-supporting family unit tends, on the other hand, to develop the prudence and forethought without which no limitation to early marriage and to the number of children can be expected.

Malthus stood in vigorous opposition to any social arrangements subordinating the individual's responsibility. The laws of property and marriage, and the principle of self-interest, he regarded as absolutely essential. Therefore communism in all its forms is subversive of human progress. His denunciation of the English Poor Laws, which weakened this sense of individual responsibility, is readily understood on the basis of this assumption. It also explains why Malthus

⁴ Penrose, E. F., *Population Theories and Their Application* (1934), Part I, Ch. I, *passim*

could never countenance the practice of birth control. "I should always particularly reprobate any artificial and unnatural modes of checking population, both on account of their immorality and *their tendency to remove a necessary stimulus to industry.*"⁵ If it were possible for each married couple to limit by a wish the number of their children, there is certainly reason to fear that the indolence of the human race would be very greatly increased. . . ."

Malthus wrote with humanitarian interests in view. If his melancholy conclusions seem to be at variance with such interests, it was because of his belief, on the one hand, in a constant law of necessity operating to restrain population, and on the other, in a conception of human nature leading him to the position that the pressure of population was a necessary stimulus to economic activity, and therefore essential to social progress.

MALTHUSIAN PATTERN OF POPULATION GROWTH

The expression of the potentiality of population growth in terms of a geometric ratio has given to some readers the idea that Malthus expected a rapid growth of population. On the contrary, he maintained that the normal state of society was that of a stationary population, or one increasing very slowly. Newly developed countries would reach such a state at a later period in their history, but the differential rates of growth of population and subsistence made it inevitable that they

⁵ Italics by the author.

should reach the same position occupied by the older settled countries. Differences in social and economic organization, resulting in a more equitable distribution of wealth and income, might postpone the impact of the pressure of subsistence upon the lower orders of society, but this would be only of momentary benefit. These classes would soon be at the subsistence level again.

According to Malthus, the pattern of population growth is "a sort of oscillation", a series of retrograde and progressive movements fluctuating about a norm. Factors affecting subsistence may vary over short periods. When subsistence diminishes, the positive checks operate more severely; when relative plenty prevails, the increase in the number of births, together with the diminution in the force of the positive checks, increases the numbers of the people to the point where society is no better off than before the increase took place. If in the course of history the favorable factors outweigh the unfavorable, a small but steady increase in numbers might be expected.

The phenomenal growth of population in western Europe and the United States, during the nineteenth century, cannot be fitted into the Malthusian pattern. To the disciple who maintains that this discrepancy between actual growth and the master's principles of growth is due to the action of factors unknown to Malthus and his generation, the critic must answer that Malthus propounded a principle supposedly based on natural, universally valid laws. The failure of the principle to be of service in the explanation of modern popu-

lation problems constitutes a serious indictment of it for the modern student.

OPTIMUM THEORIES OF POPULATION GROWTH

NATURAL AND SOCIAL THEORIES

Contemporary students have developed population theories that in general fall into two categories: the natural theories and the social theories. The natural theories are based on the hypothesis that there is something inherent in the nature of man, or of the world in which he lives, that determines his growth at a rate and in a direction largely or wholly beyond his control. The proponents of this type of thought have searched for some natural principle or law to account for the observed phenomena of population growth. These theorists are the logical descendants of Malthus.

The social theorists are impressed by the fact that the Malthusian doctrine has proved to be inadequate as an explanation of historical trends. They realize that there are many factors of which Malthus was unaware, or of which he underestimated the importance, that play an essential role in the determination of population growth. If the conceptual framework of natural law on which his work was based is discarded, it is evident that the hypothesis of an inevitable tendency to overpopulation may be abandoned. Students are then faced with a large number of factors at work, including

social and institutional factors, and the problem is to evaluate their significance.

If the concept of a basic natural law is sought, there is little use in searching for causes. Once such a natural law is discovered, knowledge of the past and future of population growth is complete, and growth according to natural law is inevitable. Writers who adopt the standpoint of a social theory of population deny, therefore, the validity or usefulness of such a natural law. Instead, they begin with the concept of an optimum population, that is, a population best suited to attain some desired state. This concept of an "optimum" has meaning, of course, only if viewed in connection with some assumed purpose or objective.⁶ For example, statesmen and soldiers have had some concept of the optimum in terms of military power and national prestige; churchmen have had their concept of an optimum, influenced by the Biblical injunction to "be fruitful and replenish the earth." The economic concept of a population optimum, however, is concerned with the size of population best fitted to secure the maximum economic returns from a given body of natural resources, under a given type of social and economic organization. As thus expressed, the idea of the optimum represents the most productive ratio between population and natural resources, as well as the most efficient distribution of income from the viewpoint of economic welfare.

⁶ The emphasis is thus shifted from the discovery of what must be, to the determination of what ought to be.

THE INCOME OPTIMUM THEORY

The measure commonly proposed for determining "the maximum economic returns per head" is that of per capita real income—tangible commodities of all sorts, such as food, clothing, housing, and personal services, all of which are secured by the expenditure of money income. The measurement of real income constitutes a problem, because no single index exists in which physical quantities of such various kinds of goods are combined. It is necessary to fall back on the money values of such commodities in order to obtain a common unit for addition. The criterion of the income optimum is therefore the money value of real income.

Defects of Per Capita Real Income as a Measure of the Optimum. The measure of real income is not adequate as a guide to the determination of the income optimum unless it is supplemented by other data. The measure, today, of real income does not reveal whether such a flow of goods can be continued in the future, even over such a short period of time as the life of an individual. A high rate of consumption in the present obtained without regard for the future is not calculated to promote the social welfare. Some light is thrown on the continued productive capacity of a country if something is known of the relationship between producers' and consumers' goods. Statistical measures of this relationship should, therefore, supplement the measures of real income.

The most glaring defect of the per capita income optimum, as a measure of national welfare, is that it

fails to take account of distribution of income. Thus, a large per capita income may exist and at the same time great poverty prevail, due to maldistribution of income.

THE WELFARE OPTIMUM THEORY

Furthermore, it is incorrect to assume, as do many exponents of the income optimum, that the maximum per capita real income represents also the maximum welfare. The income optimum has generally been stated in such a way as to imply that a country in course of attaining the optimum position as to per capita real income is on the way to obtain maximum economic welfare, because it is approaching a position where the maximum satisfaction of desire can be obtained. The sum of individual desires does not necessarily represent what is socially desirable. There is no identity between the real income maximum and the welfare maximum.⁷

The idea of the welfare optimum has the merit of pointing to the fact that increased per capita income alone is not necessarily an increase in welfare. It is important to know the nature as well as the amount of goods consumed, and it is important to know how they are distributed among people. According to the concept of the welfare optimum, the optimum condition is reached in a given area if per capita real income stands at a maximum when it is spent in the consumption of the kinds and quantities of goods and services that, in

⁷ For a discussion of the welfare optimum, cf. Penrose, E. F., *op. cit.*, Part I.

the light of scientific knowledge, makes a greater contribution to welfare than, in the existing state of the arts, can be made by any alternative form of consumption.

APPRAISAL OF OPTIMUM THEORIES

The development of the concept of the optimum represents a considerable advance in population theory. By rejecting the hypothesis of inherent natural processes as determinants of population growth, greater impetus was given to the study of environmental factors responsible for the rate and direction of changes in numbers. In the modern era of increasing governmental control, the optimum theories have supplied a motive for such investigations. Thus, if environmental factors are responsible for such trends, there is the possibility that population movements are susceptible to government regulations affecting the geographical distribution of population, or affecting the distribution of real income.

Furthermore, the optimum theories compel a comprehensive treatment of all relevant economic factors affecting population growth, many of which were ignored or underestimated in the Malthusian analysis. In this aspect they represent a new approach to the subject, namely the proportionality of the factors of population, resources, and the state of the industrial arts, and the effort to determine the ideal or optimum relationship between them. This relationship is not pre-ordained by the unavoidable incidence of natural law, but is relative to time and place.

Limitations of the Optimum Theories. At the same time, it is well to recognize the limitations of the optimum theories. The great variety of factors determining maximum production per capita makes it difficult to say just what the economic optimum of population is, or when in any given country it has been reached. The concept is abstract and the problem is complicated.

Furthermore, the problem of the distribution of income presents difficulties. In some cases the exponents of the income optimum have ignored the problem by assuming the existing economic order and considering only changes in productivity of the prevailing economic system. But the welfare optimum, concerned as it is with a criterion of the socially desirable consumption, cannot ignore the significance of the distribution of income. In practice, however, it is extremely difficult to discover what constitutes an optimum distribution.

A further criticism of the optimum theories is that they make no allowance for moral and spiritual values in their calculations. The standard adopted is a quantitative one, ignoring the development of the human personality, the living of the "good life." The assessment of values in human life, in terms of their consequences upon productive efficiency alone, is a narrow view of human welfare.

Utility of Optimum Theories. It does not seem necessary to abandon the income and welfare optimum on the ground that the concept is necessarily vague and difficult of application. While it is true that the location of the optimum point, however defined, may be impossible, what chiefly concerns the student is the observation

and interpretation of the *changes* taking place. He is interested in these changes more than in the question of what is, at any given time, a perfect distribution of productive effort. He wants to know whether the changes in per capita consumption, or in the distribution of income, are leading to increased per capita welfare, or the contrary; whether changes in methods of production will raise or lower the per capita income optimum population.

He is thus driven to confine his efforts to certain practical aspects of growth contained in the data available, which record changes in per capita income and welfare over a given period, and then endeavor to discover how far these changes have been influenced by population factors. The concept of an optimum is still useful as a conceptual device in that it is the expression of both the approach to and the objective of population studies. Its use implies, on the one hand, the analysis of all relevant factors bearing upon population growth associated with numbers, resources, and the industrial arts; on the other, the use of such knowledge to develop economic policies based on the attainment of the maximum economic welfare for the existing population.

CHAPTER II

The Growth of World Population

THERE are a number of different aspects to the modern population problem. In the first place, there is the issue raised by the phenomenal growth in world population during the past hundred years. The pressure of increasing numbers has stimulated the search for new sources of raw materials and for markets, and has intensified the economic rivalry among nations. Furthermore, the unequal rates of growth of various powerful nations have raised problems of the international balance of power. Not only are nations growing at unequal rates, but, within the boundaries of the highly industrialized nations, succeeding generations are produced by differential rates of growth for urban and rural dwellers, and for the several social and economic classes within each country.

Furthermore, all the evidence points to a slowing down of the past rates of growth of population. Any

country where production has been adjusted to a rapidly growing population must look forward to serious modification of its economic organization of production and distribution when its rate of population growth declines.

POPULATION AS A DYNAMIC FORCE

The period of one hundred and seventy-five years following the Industrial Revolution has been called the "Age of Invention." The generations born during that time have been filled with boundless confidence and pride in the endless succession of mechanical appliances that have extended man's control over his destiny. He has not been slow in recognizing that inventive power has altered the face of his universe, and in fact he regards *change* as normal to the age in which he lives. The growth and movement of population is a dynamic factor of no less significance than the power of invention, although not so generally recognized. These two powerful forces, working together and reinforcing each other, mold the history of nations and govern the life of the people. When population in earlier periods was stationary or increasing very slowly, and when work was performed along lines established by tradition, with the same tools that had been used for generations, the force of these dynamic changes was not appreciated. But the release of human energy in the course of the nineteenth and twentieth centuries so accelerated the rate of change that the effects could not be overlooked.

As already stated, the population problem consists in

the relationship between population, resources, and economic organization and technique. It involves the analysis of the proportion that exists among these factors, or that it is desirable should exist among them. The condition of the United States in the early nineteenth century presents an illustration of a population too small and widely scattered to make full use of its available resources, whereas India today exhibits the characteristics of a country so populous, relative to its resources and productive equipment, that a large part of its population is doomed to a life of dire poverty. From this standpoint underpopulation and overpopulation are relative terms, depending not upon the absolute number of people, but upon their number in relation to the resources and technique of the period under discussion.

Historically, population growth has been conceived as a desirable end from the standpoint of military and industrial power; on the other hand, the rapidity of this growth in modern times has so impressed itself upon succeeding generations that the problem appeared to be narrowed down to the question of overpopulation and the means of avoiding it. This prevailing fear, whether or not justified by facts, has been made the starting point for national policies of colonization, domination of politically backward countries, and imperialistic expansion generally.

The student must adopt an attitude of skepticism toward such policies, if he is to determine objectively whether they are justified by the facts or merely represent a rationalization of the will to power. He will avoid

the error of taking statistics of growth and density of the populations of the several nations as isolated data. He will examine the state of the actual or potential resources, of the efficiency of the productive equipment of the country in question; and since no nation in the modern world lives a self-contained life, he will consider the distribution of world resources with respect to political control, and particularly the possibilities of international trade as a means of attaining a wider distribution of goods. He will then be in a position to determine whether the changes that have taken place, and the present situation in such countries, are due primarily to population factors.

SLOW RATE OF GROWTH PRIOR TO THE INDUSTRIAL REVOLUTION

Trustworthy figures of population growth are to be found in all civilized countries, and in other countries over which white men have extended their rule. Thus, statistics can be obtained from countries representing over three fifths of the inhabitants of the globe. Using the most reliable estimates available for the balance, statisticians have estimated that the population of the world at the present time is a little over two billion. When one takes into consideration the thousands of years that the human species has been in existence, and the enormous potentiality of increase with which humanity is endowed, this figure does not seem excessive. It is evident that only a small fraction of the potential power of increase has been utilized.

It is important to inquire as to the way in which population growth has been kept within the limits of the

available means of support. There are two things that limit the power of multiplication of the human species from being exercised to its fullest extent. The first involves the fertility of the species. Potential reproductive power is not exercised to its fullest extent when some people do not marry, or prevention of conception is practiced by married people, or abortion and infanticide receive the sanction of society. In any of those cases, the *fertility* of the society, the number of children actually born, is less than its fecundity, or the number of possible births. The second important factor affecting numbers is *mortality*, or the elimination of the species before maturity. Such incidents as premature death by disease, famine, war, or natural catastrophies, may destroy life before the reproductive period has been reached or completed.

As far back as the record of humanity goes, these two factors limiting the power of multiplication have been acting as checks upon the growth in numbers. They have taken different forms in different periods of recorded history and at different levels of cultural development. In primitive societies infanticide, abortion, and sexual taboos set limits to the fertility of the population. In modern times, such checks, with the exception of abortion, have either disappeared or become subordinated to less crude limitations upon fertility. The mortality factor has also varied in the force of its incidence from age to age. It may have been of less importance as a check in primitive societies than in later times when disease and war probably took a heavier toll of human life.

In view of the phenomenally rapid growth of popula-

tion in the nineteenth century, which has come to be regarded by the present generation as an altogether normal situation, it is pertinent to recall the slow rate of growth prevailing in the past. The length of time during which population was stationary or slowly increasing suggests that the growth of the last two centuries is exceptional rather than normal. This view, in turn, stimulates the study of the factors accountable for the rapid increase in modern times. And, furthermore, in view of the fact that in every society there have been effective factors limiting the potential powers of increase, modern students have centered their attention upon the nature of these factors, and with the aid of additional data and refined statistical methods not available to earlier generations, have calculated their significance for future trends of growth. Modern population growth may be, after all, only a spectacular episode in the history of the human race, a sort of tidal wave of humanity which may ultimately subside to the rate of increase that prevailed before its coming.

FERTILITY AND MORTALITY

CHARACTER OF POPULATION GROWTH IN THE WESTERN WORLD

The rapid growth of the population of Europe and of the countries peopled by the descendants of Europeans has already received comment. In this section attention will be given to the rates of growth of this group, with incidental references to rates of increase in

other parts of the world. People of European origin number about 650,000,000 and represent about one third of the world population. It has been estimated that since 1800 the increase of Europeans has amounted to about 400,000,000 while that of other peoples has probably not been more than 200,000,000 to 300,000,000. The annual rate of increase of world population is estimated at about seven per thousand. It is largest in the Americas where population is increasing about one and a half per cent per annum; and smallest in Asia, where the population appears to be growing at a rate of less than one-half per cent per annum.¹

The population of England and Wales, where the earliest effects of the Industrial Revolution were manifest, illustrates the rapidity of this growth. It rose from 8,892,536 in 1801 to 17,927,609 in 1851; by 1901 the population had increased to 32,527,843; in 1911 it stood at 36,070,492; in 1921 at 37,885,242, and in 1931 reached 39,947,931.

The table on page 50 illustrates the rapid increase of population since 1700 in Europe and the Americas.²

Of equal interest with this phenomenal rate of growth is the manner in which it has taken place. It was based on the increase in productive power that resulted from the Industrial Revolution. This epoch-making transformation in technique weakened the positive checks upon which Malthus counted to con-

¹ Dublin, L. I., "The Population Problem and World Depression", *Foreign Policy Pamphlets* (1936), *passim*

² Dublin, L. I., and Lotka, A. J., *Length of Life, A Study of the Life Table* (The Ronald Press, New York, 1936), p. 31. Reproduced by permission of the publishers

trol the growth of numbers; namely, the lack of the necessities of life, and the heavy incidence of disease. As he would have anticipated, the mitigation of

POPULATION OF EUROPE AND AMERICA SINCE 1700
(IN MILLIONS)

YEAR	EUROPE	U.S.A.	OTHER AMERICAS
1700	110	.26	
1750	140	1.05	
1800	187	5.31	
1820		9.64	
1850	267	23.19	
1900	406	75.99	
1920	449	105.71	103.70
1928	478	119.86	118.47
1930	505.73	122.78	127.87

such checks led to a surprising increase in population.

On the other hand, an analysis of the factors accompanying and accounting for this growth reveals a situation that was not dreamed of in his philosophy. Toward the latter part of the nineteenth century a marked change took place in the trend of the birth rates in European countries and the United States. Birth rates began to show a marked downward trend, which has continued at an accelerated rate to this day. The increase of population was caused by the fact that the death rate fell even more rapidly than the birth rate, the differential between the two accounting for the large annual increase in numbers.

Furthermore, in spite of this steady increase over the greater part of the period of one hundred and fifty years, the standard of living of the people was rising.

It has been calculated that between 1800 and 1914, while the population of England increased about five times, the income of the country increased approximately ten times. When to this is added the fact that the purchasing power of money has about doubled in this period, the population of England appears to be about four times as well off in 1914 as it was in 1800. There are two ways in which a population can respond to the greater ease of the conditions of life: It can develop a denser population living at the same standard as before, or else it can adopt a higher standard of living. It is apparent from the study of modern trends of population growth that the former alternative has not been followed, at least in its entirety.

THE BIRTH RATE

The table on page 52 is presented to show the trends in the yearly crude birth rates (births per thousand of the total population). It reveals a remarkably uniform trend in the countries of western Europe and in the United States.³ All the countries in these areas show a continuous fall in the birth rate over a number of years. Leaving out Russia for the time being, in every case a relatively high birth rate was maintained in the earlier periods covered by statistical records. The Swedish record of births goes back to 1746. Until the five-year period 1871-1875 the rate remained relatively high, although exhibiting considerable fluctuations.

While there are no figures showing the English

³ From Charles, E., *The Twilight of Parenthood* (1934), Table XI, p. 79. Reprinted by permission of the publishers, W. W. Norton and Company

CRUDE YEARLY BIRTH RATES BY PERIODS *

YEARS	ENGLAND AND WALES	GERMANY (PRESENT TERRITORY)	FRANCE	SWEDEN	ITALY	RUSSIA (EUR.)	JAPAN	U.S.A. (WHITE)	AUSTRALIA
1746-50				35.1					
1751-55				37.1					
1756-60				34.3					
1761-65				34.6					
1766-70				33.8					
1771-75				31.3					
1776-80				34.7					
1781-85				31.8					
1786-90				32.1					
1791-95				33.9					
1796-1800				32.8				55.0	
1801-05				31.4					
1806-10			31.7	30.4				54.3	
1811-15			31.7	32.9					
1816-20			32.0	33.7				52.8	
1821-25			31.4	35.8					
1826-30			30.5	33.5				51.4	
1831-35			29.6	32.4					
1836-40	31.3		28.4	30.6				48.3	
1841-45	32.3	36.3	28.1	31.3					
1846-50	32.8	35.3	26.7	30.9				43.3	
1851-55	33.9	34.3	26.1	31.8					
1856-60	34.4	35.7	26.6	33.7				41.4	
1861-65	35.1	36.5	26.7	33.2	38.7				41.9
1866-70	35.3	37.2	26.1	29.7	37.1			38.3	39.8
1871-75	35.5	38.7	25.5	30.7	36.8				37.3
1876-80	35.3	39.0	25.3	30.3	36.9			35.2	36.8
1881-85	33.5	36.8	24.7	29.4	38.0	50.7			35.2
1886-90	31.4	36.4	23.0	28.8	37.5	50.2	28.8	31.5	34.4
1891-95	30.5	36.1	22.3	27.4	36.0	48.9	28.5		31.5
1896-1900	29.3	35.7	21.9	26.9	34.0	49.5	33.0	30.1	27.3
1901-05	28.2	34.0	21.2	26.1	32.6	47.7	34.8		
1906-10	26.3	31.3	19.9	25.4	32.7	45.8			
1911-14	24.1	27.4	18.6	23.5	31.7	44.8			
1915-19	19.4	16.5	11.3	20.8	22.7				
1920-21	24.0	25.4	21.0	22.6	31.1	30.9	36.2	26.1	
1922-23	20.1	22.0	19.2	19.2	29.8	33.4	34.2		
1924-25	18.6	20.6	18.8	17.8	28.1	42.4	33.8		22.9
1926	17.8	19.5	18.8	16.9	27.8	43.7	34.8	21.4	22.0
1927	16.6	18.3	18.1	16.1	26.9	43.2	33.6	20.6	21.7
1928	16.7	18.6	18.3	16.1	26.6	42.7	34.1	19.8	21.3
1929	16.3	17.9	17.7	15.2	25.6		32.7	18.9	20.3
1930	16.3	17.5	18.0	15.4	26.7		32.4	18.9	19.9
1931	15.8	16.0	17.4	14.8	24.9		32.2	17.8	18.2

* For all countries except Germany the territory is that of the period in question.

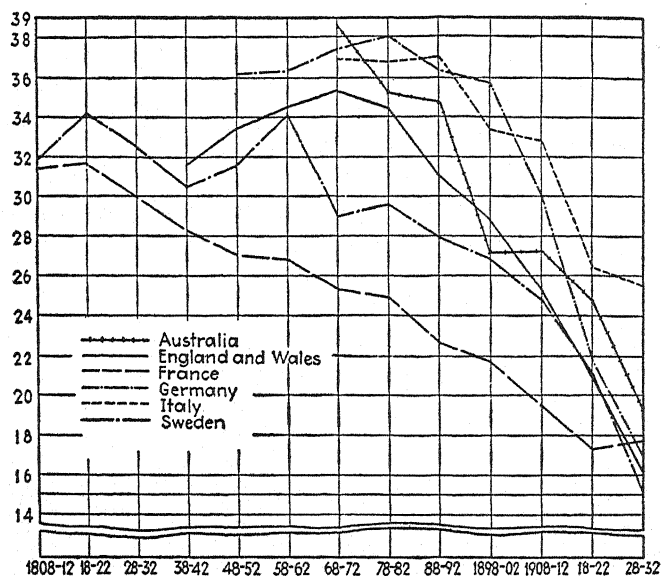
birth rate prior to 1837, it is probable that the rate was about thirty-three to thirty-five per thousand at the beginning of the nineteenth century. The French birth rate during the first quarter of the nineteenth century remained in the neighborhood of 31.7 per thousand.

Period of Declining Birth Rates. In western and northern Europe the birth rate from 1871 to 1885 averaged about thirty-two per thousand. This period was a turning point, after which a steady fall in the birth rate is to be observed in the countries under consideration. This fall was continuous, with the exception of the war period. During the war years there was a sudden fall in the birth rate because of the postponement of marriages and births. During the next few post-war years the birth rate rose, but nowhere did it rise higher than the level existing before the war, and it soon resumed everywhere its downward course. In 1931 the countries whose average was thirty-two births per thousand at the time when the decline definitely began reached the following levels: England 15.8; Germany (present territory) 16.0; France 17.4; Sweden 14.8; Italy 24.9. At the same time, the birth rate of the total white population of the United States was 17.8 and of Australia, 18.2.

Certain countries represent exceptions to the general trend. In France the decline began earlier, in the period 1861-65, when the birth rate was 26.7. In Italy the decline began somewhat later, and has been less continuous, so that Italy has a higher birth rate than the countries previously mentioned. Russia has the highest birth rate of any country in Europe. Although not as

high as in the 1880's, the figure of 42.7 per thousand in 1928 attests the remarkable fertility of Russian women.

The figure shown below illustrates the fall of the birth rate in certain selected countries between 1808 and 1932.⁴



CRUDE BIRTH RATES OF SELECTED COUNTRIES, 1808 TO 1932

FACTORS ACCOUNTING FOR THE DECLINE IN THE BIRTH RATE

The course of population growth among primitive peoples and in the historic period preceding the nine-

⁴ From Thompson, W. S., *Population Problems* (Second edition, 1935), p. 122. Reproduced by permission of the publishers, McGraw-Hill Book Company, Inc.

teenth century establishes the fact that no population has ever fully realized its potential power of multiplication. Checks operated on the preventive side to limit the size of families, although these checks varied from time to time according to the customs and habits of the people and the social sanctions established by the community. It should not be a matter of surprise that the portentous social and economic changes that took place in the nineteenth and twentieth centuries should have been accompanied by the development of motives and practices arising directly from the changing social environment. Within the modern period man had gained a new measure of control over the death rate. If the birth rate had remained unchanged, the rapid decline of the death rate might in a short time have brought the world face to face with the disastrous consequences of overpopulation.

Family Limitation by Means of Volitional Control.

At any given time, among all classes or among certain classes only, the birth rate may be reduced by the practice of bachelorhood or spinsterhood, by late marriage, or by the deliberate limitation of the size of the family. The term "volitional control" is used to cover all these means which in more or less degree limit the number of births and represent the exercise of individual choice.

The term "birth control" is used in a narrower sense to indicate the control over the number of offspring exercised by married people through the use of contraceptives. Volitional control may be used without such means through the practice of self-control by the partners in marriage.

If the thesis developed in this chapter has been followed carefully, it is obvious that the control over population increase has developed along lines unforeseen by Malthus. The preventive check has been substituted for the positive checks. The nature of the preventive check now applied, namely the limitation of the size of the family after marriage, is altogether at variance with the Malthusian conception of "moral restraint." Moreover, limitation of numbers has become effective at levels well above the minimum of subsistence. A psychological and social complex of factors takes the place of the pressure of population on the food supply. These factors are summed up in the statement that population growth in the western world is limited by the ambition to maintain and improve the standard of living. This motive is rendered effective by means of the practice of volitional control of various types.

Fundamental Motives of Family Limitation. It is important to distinguish between the means and the motives for family limitation. There can be no doubt that contraceptive practices account to an overwhelming degree for the reduction in the size of the family. Whereas students of population are in general agreement as to the means of family limitation, they are the first to admit that the human motives impelling the adoption of such means are cloaked in obscurity. The limitation of the family is highly individualized. The motives depend on the individual judgments and choices of the millions of married couples that compose a given population. Motives may vary from family to family according to circumstances. On the other hand, individual

habits and attitudes in turn reflect the impact of the social environment.

The growth of industrialism has effected a great improvement in conditions of living, and this, in turn, has stimulated the ambition to improve the social status. The desire to emulate, the ambition to succeed, the hope to "better" oneself or one's children, are prevalent attitudes fostered by free competitive enterprise. Thus, the numerous ambitions of married people compete with the desire for children.

The constitution of modern industrial society imposes certain handicaps upon the maintenance of large families, which affect some classes more than others. Furthermore, the urge to maintain or change one's social status, for various reasons, may be stronger in one class than in another. The result is that the rate of decline in the number of births is not spread evenly throughout all classes in the community. This differential birth rate shows itself in a number of ways: the birth rate is higher among rural than among urban populations; it is higher among laborers and hand workers than among white-collar workers. It can be explained, in part at least, on the basis of the effect of children on the attainment of ambitions. This effect varies with the social and economic environment. The ambitions of families in a farming community and the effect of children on the attainment of these ambitions, are far different from the circumstances surrounding young couples living in an urban setting.

Within the city itself, families decline in size from those of unskilled laborers to those of the semi-skilled,

skilled, and white-collar workers. The desire for social promotion of a young professional man need only be contrasted with that of a day laborer, to understand the effect of the size of the family on the situation of each respectively.

Change in the Status of Women. When considering the factors responsible for the practice of family limitation, special attention should be given to the change in the status of women in the last century. The raising of the general level of the position of women in the western world has been a salient characteristic of recent social evolution. If it is correct to ascribe the falling birth rate to the desire to maintain or to raise the standard of living, in response to environmental influences stimulating social ambition and the desire to win social promotion, then it can be asserted that the emancipation of women has roughly doubled the number of people susceptible to such influences.

Before the development of the movement for emancipation, women had very little control over their lives, and very small scope for the play of personal aims and ambitions outside of the circle of the family life. It was possible for Malthus to write of the problem of population as if women had no part in it. But at the present time there can be little doubt that the increasing dignity of the position of women in society is a factor leading to the acceptance of family limitation.

THE DEATH RATE

The death rate has declined in much the same way as the birth rate. In some countries, as in France and

Sweden, it began at least a hundred years ago; in others, where modern sanitation and medicine have been slow in developing, the decline in the death rate does not appear in the statistical figures until after the World War. In general it can be stated that in western countries, and in countries occupied by the descendants of the white race, the fall in the death rate has been so general as to be regarded as a normal phenomenon accompanying modern social development. As previously stated, the fall of the death rate in many European countries was more rapid than the fall of the birth rate, until the period of the World War.

Only estimates of the death rate prevailing in the eighteenth century are available. However, it is established that in Sweden there were 33.3 births and 25.4 deaths per thousand of the population during the decade in which Malthus wrote the famous *Essay*. In 1932 the birth rate was 14.5 and the death rate 11.6. In England, during the eighteenth century, there may have been a slight increase in the birth rate, although this is not certain. It probably reached thirty-five per thousand of the population in 1800. Estimates of the death rate in the England of 1750 place it somewhere in the neighborhood of thirty to thirty-five per thousand of the population. It had fallen to twenty-five or thirty per thousand in 1800.

The effects of the Industrial Revolution on population are most strikingly illustrated by the developments that took place in the cities. There is evidence that the death rate in London was as high as fifty per thousand in 1750, and was still over thirty per thousand in 1800. It

has furthermore been estimated that, from 1700 to 1750, 500,000 more deaths than births occurred in that city. In 1932 the London death rate was twelve per thousand. Such a decline is to be largely attributed to the changes in manner of life made possible by the Industrial Revolution. It was not until after 1750 that any city could be supplied with wholesome food, pure water, sewage disposal, good housing, and a minimum of medical attention. Probably it was not until after 1800 that it became possible to have large towns and cities in which births exceeded deaths.

FACTORS ACCOUNTING FOR THE FALL IN THE DEATH RATE

✓ *Reduction in Infant Mortality.* The greater part of the decline in the death rate has been brought about by the reduction in infant mortality. It is difficult to realize that, until recent times, a considerable number of children died before reaching one year of age, and that it was not unusual for half or more to die before the age of ten. In all countries, the statistics of infant mortality (deaths under one year per thousand of live births) show a marked improvement which has continued into the present century. In northwestern Europe, the United States, and the British self-governing dominions the mortality is well below one hundred per thousand, ranging from ninety-one in Belgium during the period 1928-1932 to thirty-four in New Zealand during the same period. Present rates in southern Europe, South America, and Japan are somewhat higher. Comparing the period 1898-1902 with

the period 1928-1932, the following changes illustrate the degree of improvement: In the former period the rate for England and Wales was 152, and in the latter period 66; in France during the same periods the figures were 154 and 83; in Germany, 1901-1905, the rate was 199, and 1928-1932, 86.

The same trend is evident from the statistics of survival to ten years of age. It was calculated that in France prior to 1750 only 484 children out of a thousand born alive survived to their tenth year. In Germany, Süßmilch, using figures taken prior to 1775, calculated that 532 survived to the tenth year. In the period 1920-1923, the number of survivors in France had increased to 855 per thousand live births; and in Germany, 1924-1926, the survivors numbered 863.

This progressive reduction in infant mortality has been one of the finest achievements of modern times. Without question this decline has been the most important factor in the growth of population in the western countries since the beginning of the nineteenth century. Those who have come to regard a falling death rate as normal to our times should ponder this fact. In countries where infant mortality has been reduced to fifty or sixty the future saving will be small as compared with that of the past. There is a limit beyond which further reduction cannot be achieved, and the saving of life at higher ages, significant as it is, does not compare in its results with the reduction and control of the diseases to which children below the ages of ten or fifteen are subject.

This consideration of the place of infant mortality in the composition of the death rate suggests that a further decline of the death rate in the western world is not to be expected. This conclusion is rendered inevitable as the effects of the falling birth rate become apparent. The low death rates of today are possible because the population has been increasing very rapidly in the recent past, and the present age groups are favorable to a low death rate. But when, as the result of a rapidly falling birth rate, there will be a greater proportion of older people in the community, the crude death rate is bound to rise, nor can this tendency be offset by any further considerable reduction in the infant mortality rates.

Industrial Revolution and the Death Rate. The reduction of the death rate is as much a product of the Industrial Revolution as the progressive fall of the birth rate. This is not to deny the great contributions to the lengthening of the average expectation of life made by medical research and practice. But it is to assert that improvements in sanitation and the development of more favorable economic conditions played a major role. Sanitary measures, while directed by medical considerations, can be achieved only by a country with a high level of engineering education and practice; and its economic system must be sufficiently productive to enable it to devote capital, labor, and raw materials to purposes of health and sanitation. Society must be able to produce a surplus above its more immediate needs before it can add these other things unto it. More specifically, sanitation made it possible

for large populations to live in cities in which births exceeded deaths. The Industrial Revolution hastened the growth of cities; if the latter had continued to kill off their population at the rates that probably prevailed in cities in the early eighteenth century, the phenomenal population growth of the nineteenth century would not have been possible.

DECLINE IN THE RATE OF POPULATION GROWTH

If crude birth and death rates are taken as measures of population growth, the natural increase of a population is obtained by subtracting its death rate from its birth rate. The result is a measure of natural increase expressed as a rate per thousand of population. In a number of ways crude rates are unsatisfactory standards for the measurement of population trends, and in modern population studies they have been replaced by more refined statistical methods. Many of the conclusions as to population growth set forth in this section have been reached by the application of these newer methods. A brief description of the latter will be given in a later section.

DECLINE IN THE RATE OF NATURAL INCREASE

A superficial consideration of the relationship between the downward trends of birth rates and death rates reveals the fact that a population that owes its

natural increase to a more rapid fall in death rates rather than to a rise in birth rates cannot long continue to increase, if these trends persist. It is theoretically possible that the birth rate should fall to zero, assuming the fullest use of the means of volitional control. But it is not possible for the death rate to fall to that extent, for the simple reason that medical science has not as yet discovered the fountain of youth. The *span of life*, or the extreme limit set to human life by old age, which is determined ultimately by the physiological processes of the body, has not been increased within historical times. On the other hand, there has been an increase in the *expectation of life*, or the *mean length of life*, which is the average number of years lived by all persons born in a given period.

Thus, as the death rate declines through the application of sanitary and medical knowledge and practice, it meets, so to speak, increasing resistance as it approaches the limit of the achievement of these sciences. Moreover, if the birth rate continues to decline through a number of generations, it not only reduces the number of births, but it changes the age composition of the population. A country with a large proportion of older people must expect a rise in the death rate. As birth rates continue to fall and death rates cease their downward trend or actually rise, a point is reached where the rate of natural increase is barely sufficient for replacement needs, in which case the population becomes stationary. If the trends continue, a decline in population must follow. The succeeding paragraphs will show that, in many parts of the world,

certain populations are approaching a stationary condition.

The rates of natural increase for leading countries do not show the same consistent trends manifested in the birth and death rates. In the nineteenth century there were periods when the death rates fell more rapidly than the birth rates, which resulted in a rise in the rates of natural increase. Thus in England in successive periods between 1838 and 1912 the rates of natural increase were 10.8, 12.6, 13.1, 14.7, 11.9, 11.4, and 11. In many countries the rate mounted to twelve and fifteen per thousand. A definite change came with the World War. Since then the rate has fallen almost uniformly, and has declined to the level of fifty to a hundred years ago. The following table is indicative of the trend:⁵

RATE OF NATURAL INCREASE

	ENGLAND	FRANCE	GERMANY	ITALY	SWEDEN	UNITED STATES
1908-1912	11.0	0.9	13.1	11.9	10.6	9.9*
1928-1932	3.9	1.3	5.5	10.3	3.2	7.1

* U.S.A., period 1918-1922

It will be noticed that France seems to be an exception to the general trend. France showed its highest rate of increase in the period 1818-1822, with a rate of 6.4. Since then its rate declined until 1880. From that time on it has had an average increase of only

⁵ Thompson, W. S., *op. cit.* Condensed from Table 96, p. 242, by permission of the publishers, McGraw-Hill Book Company, Inc.

about 1.0 per thousand. The absence of a decline since the war indicates that France has reached a stabilized condition of population growth.

Population Growth Outside of Europe. Of the countries peopled by Europeans, countries like Canada, Australia, and the United States show a steady decline in the rate of natural increase. In the case of the last country, the decline has been going on for over a century. Until 1830 our natural increase (excluding immigration) was about thirty per thousand. Since then there has been a steady decline, until in 1930 the rate stood at about ten per thousand. Should present trends persist, and our present policy of immigration restriction continue, the United States will have a stationary population in a generation or so.

As to population trends in Asia and Africa, the absence of reliable statistics compels a resort to conjecture. The outcome is affected by such developments as the adoption, by Asiatic countries, of the modern technique of the western world, and the control of western states over undeveloped countries. The rise of Japan is an illustration of the former, and the control of the Dutch over Java and of the English over the Malay States and India, of the latter condition. Since the latter part of the nineteenth century, China has had a stationary, or at best a slowly increasing, population. India may be expected to increase slowly in the next fifty years. Of future trends in Africa very little can be said, for very little is known.

The most significant development in population growth outside of Europe has been the rapid expansion

of the Japanese people. Their rate of natural increase differs altogether from trends observed elsewhere. Instead of a declining trend after the World War, the rate actually rose. The excess of births over deaths averages 900,000 annually. This rapid expansion may continue for a time, because of the fact that the present high death rate is capable of considerable reduction. On the other hand, there is evidence that Japan is following the western nations in the use of birth-control methods. This is a very recent development, but it may indicate the fact that the same forces that effectively limited the potentiality of increase in European countries may ultimately play a significant role in a country conspicuous for its adoption of the technique of the material civilization of Europe.

POPULATION REPRODUCTION RATE

The continuous fall in the birth rate during the nineteenth century, and particularly the uneven rate of decline of various countries, has led to the attempt to analyze these trends in order to determine their significance. The decline in the number of births raised the question of the fertility of the population.

Importance of Age Composition in Population Growth. Crude birth rates take no account of the sex or age composition of the population, and this is an extremely important factor. The proportion of the number of women of childbearing age to the total population may vary in one country from one period to another, or may vary among countries. The crude birth rate is determined by two factors: the average number

1 of children born to each woman during a given period, and the number of women at the age to bear children during the same period. If the number of women of childbearing age is large, the birth rate may appear to be high, even though the actual fertility is very low. England during the last generation before the war had a higher birth rate than Sweden, although the fertility of Swedish women, measured by the number of children born to women of childbearing age, was higher than in England. The birth rate failed to reveal the fact that England had a larger percentage of women at the reproductive age than Sweden.

If in the past a country has enjoyed a very rapid rate of growth, a large proportion of its population will be found in the prime of life, and its women of reproductive age will form a relatively high ratio to the total population. On the other hand, if the proportion of such women to the total population should decrease because of the persistent downward trend of the birth rate over several generations, the age composition of the population and the falling birth rate will act upon natural increase with cumulative force. Not only will women bear on the average a smaller number of children, but the number of women bearing children, proportionate to the total population, will be smaller. A large part of the natural increase of population at the present time is due to the effect of the higher birth rates of the past which have provided us with a large group of women of childbearing age. But if present trends of fertility and mortality persist, such increase cannot be expected in the future. In many nations

today, fertility is so low that the present generation of mothers is not providing for its replacement.

Gross and Net Reproduction Rates. A refined system of statistical measurement of population growth has been devised by students of the subject.⁶ The measurement takes account of the age composition of the population in so far as it affects births. Furthermore, of the children born, only female births need be considered, because the purpose of the inquiry is to determine whether a given group of women are replacing themselves.

The gross reproduction rate, therefore, can be defined, according to this method of measurement, as the number of girl children likely to be born to a woman passing through the whole childbearing period, on the basis of the fertility rates prevailing in a given place and at a given time. It is to be noted that mortality is excluded from this standard, the assumption being that a woman survives through the whole period of reproduction. For the investigator who seeks to discover the extent to which the present generation is being replaced by succeeding generations, it is more important to know the number of children born to a thousand women in the reproductive period of life, in order to determine whether the present generation is replacing itself, than it is to know the ratio, to the total population, of children born.

The gross reproduction rate gives information only as to the fertility of women between the ages of fifteen and fifty. But to estimate the capacity for growth of a

⁶ Kuczynski, R. R., *The Balance of Births and Deaths* (1928), *passim*

population, that is, its net reproduction rate, not only the number of girl children born, but also the probability of their survival through the reproductive period must be known.

The net reproduction rate, therefore, is used to represent the number of girl children who will be born to the survivors of a thousand girls born in the previous generation, on the basis of fertility and mortality rates prevailing at any one time. In this manner, a rate is obtained that measures the capacity for the further growth of population. A net reproduction rate of unity means that every mother will be replaced by another mother and no more. A country with such a rate would become stationary in the long run, if the current fertility or mortality rates did not change. A country with a higher rate or one with a lower rate than unity would be, respectively, either increasing or decreasing.

Approach to Stationary or Declining Population. The calculation of net reproduction rates according to fertility and mortality in western and northern Europe in 1926 indicates that one hundred mothers gave birth to ninety-three future mothers only. This rate of .93 indicates that, if the fertility of 1926 persists, the population is bound to decrease and even to die out, unless mortality decreases beyond reasonable expectations. In 1933 net reproduction rates for the countries in the group were as follows: England and Wales, .73; France, .82; Germany, .70; and Sweden, .73. No general rate has been calculated for the rest of Europe because of the lack of uniformity and completeness of the statistical data, but the evidence, where statistics are avail-

able, from the countries of southwestern and southern Europe, indicates that a general net reproduction rate for these countries would be considerably higher than for western and northern Europe.

One authority has reached the conclusion that the countries of the western and northern group will cease to grow at all within twenty years, if the trend in post-war vital statistics persists.⁷ On the other hand, the less developed countries lying south and east of Germany, including Spain and Italy, will continue to grow rapidly for some time to come, although the general trend toward stability is evident in them also.

This difference in the rate of the decline of natural increase in these two divisions of Europe is due to the presence of certain social and economic factors that distinguish the two. In southern and eastern Europe the death rates are capable of further reduction by the application of sanitary and medical practices. Improving economic conditions, if such can be anticipated, could do much to reduce the death rate through the better care of children and the introduction of public health measures. Moreover, the birth rate has not come under volitional control to the extent that it has in the western countries.

New Orientation of the Population Problem. To sum up the situation as exposed by recent studies, the following factors are pertinent to an understanding of the subject: The population of the world is still increasing but, especially since the World War, the birth rates in most European countries have been on the decline. In

⁷ Kuczynski, R. R., *op. cit.*

many countries of the western world, present increases do not represent high fertility, but rather an age distribution of the population favorable to a large number of births. Actually many countries of western Europe are not providing for their replacement needs. The highly industrialized countries of northwestern Europe, and also the United States, will be the first to reach a position of stable or of declining numbers. The countries of southern and eastern Europe will continue to grow for a longer period. Of the Asiatic countries, Japan shows the greatest powers of increase.

The post-war trends in natural increase of numbers have given a new perspective to the population problem. Before the war, the pressure of population received the most attention. The increase in numbers was proceeding at a phenomenal rate. Malthus had raised the specter of overpopulation, and the ghost would not be laid. "Volume after volume of population literature gave the impression that unlimited breeding was threatening the human race and that only the immediate spread of birth-control information and practice could stop the danger of overpopulation. Mankind was at the crossroads, and the birth rate had to be controlled somehow in order to save the world from its own folly."⁸ It is now realized that for the greater part of Europe and for America overpopulation has no meaning at present. Today the problem is presented in terms of the numbers necessary to maintain national integrity and the quality of the population essential to insure social progress. Attention is focused, not on present or prob-

⁸ Dublin, L. I., *op. cit.*, p. 3

able excess of numbers, but on the vast problems raised by the prospect of stationary or declining populations among the nations hitherto the leaders in the march of modern civilization.

C H A P T E R I I I

The Distribution of World Population

THE preceding chapters explained the rapid growth of populations in the civilized world during the nineteenth and twentieth centuries. Thus, it has been noted that changes in fertility and mortality rates, and the development of scientific and technical knowledge, account for changes in population.

Another aspect of population changes remains to be considered. The opening of empty or sparsely populated territories, the discovery of new agricultural areas and hitherto unsuspected mineral resources, rendered accessible by improvements in communication and transportation, have provided a powerful incentive to the economic development of new countries. This has occurred through the movement of labor and capital from regions where these factors are relatively abundant to those regions where potential resources in land and minerals are more plentiful than in the older and more densely populated regions.

Thus, coincident with the rapid growth of population, there has been a corresponding migration of peoples from the more densely populated countries to the more sparsely inhabited areas. The phenomenon of migration is not confined solely to the races of European origin; China has sent millions of immigrants to other countries of Asia. Nevertheless, because of the overwhelming political and economic significance of the migration of the peoples of the western countries, the following discussion will be confined to the spread of the races of European stock and their descendants throughout the world. These migrations have profoundly altered the distribution of world population, have affected political power, and have molded the pattern of world economic development.

THE VOLUME OF MIGRATION

Migration accounts for the difference between the present distribution of world population and its distribution one hundred years ago. Although migration has never taken place on a scale adequate to bring the distribution of population into close correspondence with the distribution of resources, it has, nevertheless, occurred to an extent sufficient to affect fundamentally world economic organization. It has been estimated that, from 1800 to 1924, about sixty million people migrated between continents. From 1800 to 1930 the population of Europe increased from one hundred eighty millions to four hundred eighty millions, while the number of persons of European stock in other continents is estimated to have grown to one hundred sixty

millions.¹ From 1821 to 1920 immigration into the United States reached the huge figure of about thirty-four millions. During the period 1860-1920, the Argentine received nearly four and three-quarter million immigrants. From 1903 to 1914, over two and a half million persons migrated to Canada.²

MIGRATION AND THE DISTRIBUTION OF POPULATION

An overwhelming proportion of European emigrants went to regions situated in the temperate zone, notably to the Americas and to the regions controlled by the self-governing dominions of the British Commonwealth. In these lands they found suitable climate, room, freedom, familiar institutions and customs, but above all, economic opportunity.

Migratory Movements in the Temperate Zone. Great Britain and Ireland have been the greatest sources of emigration. During the century beginning in 1815, about thirteen million people left the former country, two thirds going to the United States, and the rest almost exclusively to Canada and Australia. Ireland occupies a place by itself as a country of emigration. From 1841 to 1900 the population decreased from over eight million to less than four and a half million people, this reduction being of about the same size as the emigration.³

¹ Penrose, E. F., *Population Theories and Their Application* (1934), p. 178. Figures quoted from Imre Ferenczi, "Migrations" in *Encyclopædia of the Social Sciences*, Vol. X, p. 440.

² Ohlin, B., *Interregional and International Trade* (1933), p. 326

³ Clark, G., *A Place in the Sun* (1936), p. 92

Anglo-Saxon America was the overwhelming choice of emigrants from northern Europe. Belgium, Denmark, Germany, Ireland, the Netherlands, Norway, Sweden, and Switzerland sent 97.2 per cent of all their emigrants to North America and of these 88.2 per cent went to the United States. Latin Europeans preferred the countries of South America, although Italy sent a little over one half of its emigrants to the United States.

Migratory Movements to Asia and Africa. In comparison to this mass migration, the movement of population to the continents of Asia and Africa is almost negligible. Asiatic countries have offered no room for European settlement in the last fifty years, and will offer even less opportunity in the future. Most of the land worth cultivating in the settled parts has already been occupied. The arable land on the whole is more thickly settled than in the western countries. The low standards of living prevailing in the East are more effective than immigration restrictions in keeping European settlers out.

In many parts of Africa, the unsuitability of the climate to Europeans has prevented a more extensive migration. Out of every hundred persons leaving Europe in the last fifty years to settle elsewhere, less than two went to Africa. The record of permanent settlement of Europeans in Africa is considerably distorted when the figures of arrivals alone are taken, because the proportion of emigrants to Africa returning to their home country is much higher than in the case of other countries of immigration. On the basis of the *net* move-

ment, it has been estimated that in the last fifty years the permanent European emigration to Africa has been something under three hundred thousand.⁴

Character of Recent European Migration. The record of European migration set forth in the preceding paragraph indicates certain characteristics of this movement. The direction of migration has been toward the sparsely populated regions lying in the temperate zone. As will be explained in a later chapter, these are precisely the regions where the resources required by the conditions of modern economic life are to be found. The migration of labor to these regions represents a more effective combination of population and resources than prevailed before the migration took place. Such transfer of labor power from the old to the new regions promoted the rapid development of the agriculture and industry of the new countries and, through international specialization and division of labor, stimulated the production of commodities on a larger and more effective scale.

Furthermore, the greater part of this migration has been directed toward regions independent of the political control of the dominant European countries. The total *net* emigration from Europe during the last fifty years was a little over nineteen millions. The number going to the territories controlled by European countries was less than half a million.⁵ Evidently the distribution of population has not followed the pattern of the distribution of the political power of dominant nations.

⁴ Clark, G., *op. cit.*, p. 97

⁵ *Ibid.* p. 85

POPULATION PRESSURE AND TERRITORIAL EXPANSION

In recent discussions on international economic questions, the two problems commanding the most attention concern the supply of raw materials and the dangers of overpopulation. Frequently the view is expressed that the solution of both these problems lies in the acquisition of colonies by countries poorly endowed in this respect. The problem of raw material supplies will be discussed in a following chapter. It will suffice to state at this point in the development of the subject that the majority of raw materials are produced mainly in noncolonial areas, the only important exceptions being rubber and tin.

With respect to the argument that territorial expansion is necessary in order to relieve "overpopulation" at home, an effort should be made at the outset to discover the meaning of the term "overpopulation." In this volume the population problem has been presented as an adaptation of numbers to resources and technique. The best adjustment of the factors is obtained when the combination of raw materials, labor, and technical equipment is in such proportion as to yield a maximum real income per capita. "Overpopulation is beginning in a country when any further increase of population, proceeding at the actual rate of increase in that country, would inevitably lead to a *considerable* reduction in the standard of living. Overpopulation exists where this has already happened."⁶

⁶ *International Economic Reconstruction* (1936), Report by Ohlin, B. G., *op. cit.*, p. 143

Population Density Not Evidence of Overpopulation.

The fallacy of taking the population density of a country as *prima facie* evidence of overpopulation is exposed when the population of a country is regarded as one of several variable factors, all of which, when taken together, contribute to the determination of the levels of real income and the standard of living prevailing under a given set of conditions. The density of population of a country has little meaning when considered apart from the supply of raw materials produced in a country or available through trade, and without reference to the rate of technical progress. Densely populated countries have further increased their population during periods of rapid technological advance, while at the same time the standard of living of their citizens was rising. It cannot be maintained that Belgium, with about seven hundred inhabitants to the square mile, and the Netherlands, with about six hundred twenty-five, are "overpopulated", whereas Japan, Germany, and Italy, with lower densities, are not. Assertions that a country is overpopulated must be examined with great care. And even if this condition is found to exist, it is extremely questionable whether it can be remedied through colonial expansion.

Fallacy of Colonial Expansion. What justification is there at the present time for the claim that possession of colonies relieves population pressure in the mother country? In answering this question, it must be stated at the outset that emigration may relieve the pressure from a rapidly growing population. There is no reason to believe that the Malthusian doctrine holds true under modern conditions of population growth. It is unlikely

that a rapid increase in births would soon fill the places left by the emigrants. The real question is whether colonies are in fact successful in providing relief from population pressure in the home country.

The facts appear to controvert the claim. The unsuitability of the climate for white settlers, the scanty resources, the lack of capital, and the presence of large native populations in colonial areas inhabitable for the white race have played their part in confining within the narrowest limits the movement of European migration to colonial areas. This statement is meant to apply to the overseas regions that remain, at the present time, within the category of colonial territories. The situation was totally different when the British Dominions and India formed part of the colonial possessions of Great Britain. These territories were of the greatest importance in its industrial development.

Only forty thousand Europeans and Americans have settled in the British Asiatic possessions at present holding the status of colonies. The number of white settlers in the British African colonies — not including Rhodesia — is about the same. The white population in the former German colonies in Africa before the war was only about twenty thousand. In 1931, the four Italian colonies in Africa contained a white population of about fifty-seven thousand. The only colonial areas that have taken a large number of immigrants are the French colonies in northern Africa, where, through immigration and the natural increase of the settlers, the white population has reached one and a third millions.⁷

An analysis of the play of economic forces involved

⁷ Report by Ohlin, B. G., *op. cit.*, p. 151

in migration serves to explain the failure of white emigrants to settle in colonial areas, and to further strengthen the argument against a policy of colonial expansion as a means of providing relief from population pressure.

Imperialistic Expansion. It is useful to distinguish between two forms of territorial expansion — imperialistic expansion, and expansion into relatively unpopulated lands.⁸ The former term refers to the extension of political control by the government of a nation to an area already occupied by a native population of considerable density, having had, prior to assumption of control by the dominant power, some form of government of its own and possessing a culture different from that of its new rulers. The Dutch colonial possessions represent a colonial expansion of this character. Expansion into empty lands differs from imperialistic expansion only in degree; such lands are never entirely unpopulated. Nevertheless, the colonization of North America and of Australia can be considered as colonial expansion of the second type, in spite of the fact that a small number of Indians and Australian Bushmen originally occupied these territories. The significance of this classification arises from the fact that there are important economic as well as political differences between imperialistic expansion and expansion into empty lands.

Bearing in mind the fact that imperialistic expansion establishes the control of a dominant power over territory already populated, it is obvious from the con-

⁸ Penrose, E. F., *op. cit.*, Ch. IX, *passim*

clusion reached in the first chapter that such territory does not provide the basis for a substantial emigration from the dominant country. The dependent area, with an abundant labor supply and wages that are low relative to those prevailing in the dominant country, cannot attract workers accustomed, in their own country, to a higher standard of living. The only opportunity offered is for the migration of a relatively small number of skilled technical workers who must be paid wages commensurate with those they might obtain at home. The small numbers involved in migration of this type offer no direct solution to the problem of population pressure in the home territory of the colonial power.

Expansion into Empty Lands. Colonial expansion into empty lands would seem at first glance to meet all the requirements for the mass migration of agricultural and unskilled labor essential to the relief of population pressure in the emigrant country. But attention must be given to the circumstances attendant, under such conditions, upon the movement of large numbers of people. Although potential immigrants to unsettled areas do not meet the competition of native inhabitants with lower standards of living, obstacles other than the competition of native labor exist and must be overcome before extensive immigration can take place. As to the resource factor, mention has already been made of the fact that only a very small quantity of the world's resources are found in colonial areas. Assuming, however, that a given colonial territory contains enough resources to employ a considerable number of emigrants from

the politically dominant country, its rapid and substantial development is dependent not only on immigration, but also on large imports of capital. The amount of labor that can move without capital to colonial areas, even though these be supported with abundant resources, is extremely limited.

Economic Effects of Capital Exports. It is important to inquire as to the effects of such export of capital on the economic life of the home population of the dominant country. In the first place, the amount of capital invested in the colonies per white settler is likely to be very high — in British Kenya it is no less than £10,000, certainly an amount several times larger than the sum that would have been required to maintain a worker at home. In the second place, the nations with rapidly growing populations require for home purposes all the capital they can accumulate. The advantages of expansion are particularly doubtful when the supply of labor in the expanding country is large relative to its supply of natural resources. It is likely that a larger proportion of the nation's capital will be exported than of its labor, or in other words, relatively more of the scarcer factor will be exported, than of the more abundant factor.

The conclusion is inescapable that, whatever may be the merits of the claim for the relief from population pressure, colonial possessions do not provide the conditions for the satisfaction of such claims. Whenever these claims are justified, they can be met by measures more suitable to the attainment of the ends in view. It is clear that “. . . the question of the more ra-

tional distribution of the world populations is not a colonial problem.”⁹

ALTERNATIVES TO COLONIAL EXPANSION

It is therefore necessary to find solutions for population pressure along other lines than colonial expansion. The movement of labor and capital from areas in which the supply of these factors is relatively more abundant than the supply of raw materials, to areas in which the supply of raw materials is large in comparison with the supply of the other two factors (that is, labor and capital), is from both historical and theoretical standpoints the most effective means for the adjustment of population to resources.

Emigration. Throughout the nineteenth century, and during the course of the twentieth century until the period of the World War, the immigration policies of countries capable of absorbing a heavy influx of population facilitated the action of economic forces providing a more effective distribution of productive factors, and to this extent contributed to the development of the international organization of economic life. Further adjustments of productive factors might be achieved if these policies were continued. However, it is a well-known fact that the severity of immigration restrictions applied by practically all countries since the war has resulted in a rapid decline of international migration. The only notable exception has been the influx of Chinese into Manchukuo. In view of the attitude of the countries of potential immigration, there is no

⁹ Report by Ohlin, B. G., *op. cit.*, p. 152

prospect for international migration during the next decade or so, on a scale sufficiently large to influence the economic position of the nations affected by the pressure of numbers.

✓ *Social Control of Population Growth.* Another possible approach to a solution of the problem lies through the adoption of national population policies encouraging limitation of the number of births. If countries with rapidly growing populations cannot find sufficient employment at home to maintain their citizens at existing or advancing standards of living, and if no relief can be obtained through the export of labor, there remains the alternative of preventing the development of a surplus, so to speak, at its source. It is true that in all countries of Europe birth rates have been declining, and that because of the slowing up of the rate of growth many countries will reach a condition of stable or declining populations in the not distant future. But these trends do not serve to remedy present conditions induced by population pressure. Such countries still have a large annual net increase of population. Even though a country may have a net reproduction rate below one hundred, the number of persons of working age may increase for ten or more years after the rate has reached this point. This constitutes a serious problem from the standpoint of employment.

✓ The success of a policy of social control of fertility is problematical. On the one hand, a government seeking to commend such a policy to its citizens will find its efforts facilitated by the fact that it will be working in co-operation with, rather than counter to, the trend

of economic and social forces. Furthermore, it is clear that the motives leading to family limitation are of a social and economic character, and this fact suggests that conditions governing births may be responsive to social control, and therefore amenable to the influence of national policy. On the other hand, various obstacles to a policy of population limitation can be foreseen. The largest annual increment of births comes from the poorer citizens of a country. Because of prevalent low standards of living, lack of education, or religious convictions, these groups may prove to be those least susceptible to inducements altering their traditional group attitudes and habits.

Industrial Expansion. What other alternatives remain for countries with dense and rapidly growing populations? A solution lies in the direction of the expansion of domestic industry and its organization in ways calculated to make the most effective use of productive factors, given the relative proportions in which they exist at a given stage of economic development. Density of population, taken by itself, has little bearing on the problem of the volume of employment that can be provided within the boundaries of national frontiers. The important consideration in this connection is the amount of raw materials and productive agents available in combination with the supply of labor. Furthermore, it should be recalled that in recent times the rapid development of the industrialized nations provided progressively rising standards of living, in spite of a phenomenal increase in the number of their citizens. This general increase in production and income occurred in

all European countries, including those which, like the Scandinavian countries, did not resort to colonial territorial expansion. How did this come about?

Development of the Secondary Industries. As population grows, the employment of an increasing number of individuals on an area of land with given resources leads to diminishing returns per head, so long as production is confined to the primary industries, such as vegetable foods and raw materials, and technical methods remain unchanged. As long as this pattern of the distribution of productive factors persists, improved technique may not be sufficient to prevent a decline in the standard of living when the labor supply is rapidly increasing.

When the existing standard of living is threatened in this manner, it carries a strong suggestion that the combination of the factors of production has been disturbed by the dynamic character of population growth. The labor supply has changed relative to the supply of raw materials and productive agents. A country, faced with such a situation, can prevent a decline in per capita output by applying its productive factors to types of industrial production in which land and other natural resources play a minor role, compared with requirements of skill, organizing capacity, and conditions of transport. This assumes, of course, that the supply of capital keeps pace with the increased quantity of labor. This is the case where a country changes from the production of primary goods to the production of the almost infinite variety of finished manufactured goods, the output of the secondary industries. When this

change is accompanied by the economies of large-scale production and industrial concentration, the per capita real income of the population tends to rise. This is what took place in all the industrial countries of Europe during the fifty years preceding the war.

Japan furnishes an illustration of a country subjected to the strain of population pressure in which a solution of the kind suggested above might be applied with prospects of considerable success. Its arable land is densely populated, and the supply of raw materials small. The channels of emigration to potential immigrant countries are closed, and territorial expansion has tempted an insignificant number of Japanese from the homeland. For purposes dictated by considerations of military necessity and national prestige, undue emphasis has been placed on the development of primary industries, even to the extent of maintenance through government subsidies. Under these conditions the investment of productive factors in secondary industries would serve to give employment to a large number of Japanese who now crowd the agricultural occupations. Such investment would effect an internal redistribution of population, which, in turn, would result in a rational and effective utilization of the labor supply.

Dependence on International Trade. The illustration of Japan at once suggests that industrialization is dependent on international trade. The development of secondary industries in Japan requires, as its essential condition, access to the vast markets of the East lying within the reach of the Island Kingdom. Certainly the analogous European development, already referred to,

was accompanied by an enormous expansion in the volume of international transactions. If impediments to migration are to continue for some time to come, it is certain that international trade is an excellent substitute for migration. In the introductory chapter, the point was made that exchange of commodities is an indirect exchange of the agents of production. Through trade, countries with a relatively abundant supply of labor can export goods requiring large quantities of labor relative to the other factors of production, and can import goods requiring large quantities of those factors in which the importing country is deficient. A country having a large laboring population is in a position to benefit by such an exchange, providing that it concentrates its industrial efforts on the secondary industries.

CHAPTER IV

Population in the United States

IN the two preceding chapters the population problem was examined in its relation to the organization of international economic life. In the course of the discussion it was shown that the present form of the world economic structure has been determined in large measure by the growth of the European peoples and their world-wide distribution through migration.

This chapter approaches the problem from a somewhat different standpoint. Its emphasis is placed on the domestic problems of a social and economic character caused by rapid changes in the numbers and distribution of the population of the United States. The chapter immediately following will examine the economic and social significance of changes in population in the United States and estimates of future growth based upon present trends in birth rates, death rates, and immigration.

The student of American economic life is in a better position to approach the development of economic institutions if he understands the significance of population growth in the United States. Furthermore, a more detailed study of the population of the United States will reveal the processes of growth common to all countries of western civilization, because the forces at work here and abroad are essentially the same, and the trends of growth are similar. Finally, the intensive study of a single country will familiarize the student with the type of data, and the standards of measurement, on which all population studies are based.

POPULATION GROWTH

The rapidity of the growth of the nations of Europe in the last hundred and fifty years cannot compare with the phenomenal growth of the United States, which has never been equaled elsewhere in the period of recorded history. Similarly, the history of the migration and settlement of peoples contains no chapter so significant as the record of the westward expansion of the United States. The present section describes the peopling of the continental area occupied by the United States, and analyzes certain problems connected with the growth and distribution of population.

THE RECORD OF POPULATION GROWTH

The first census in the United States was taken for the year 1790; since then census enumerations have

been made for every decade, which present a sufficiently accurate picture of the growth in numbers. Estimates have been made for the colonial period from 1610 to 1780. It has been estimated that in 1660 the population was 85,000; the number had increased to 3,929,000 in 1790, the first census year. In 1860 the population was 31,443,000; in 1890, 62,948,000. Subsequent decennial increases were as follows: 1900, 75,995,000; 1910, 91,972,000; 1920, 105,711,000; 1930, 122,775,000; while the last intercensal figure (estimated) showed a population of 128,429,000 in 1936.

The analysis of rates of growth reveals that from 1660 to 1860 the rate of growth was remarkably uniform, only occasionally rising above thirty-five per cent in a decade. From 1860 to 1890 there was a slowing up of the rate of growth which remained fairly uniform at about twenty-five per cent per decade. The rate fell still lower in the next two decades, to twenty per cent, while in the two decades from 1910 to 1930 the rate was only a little above fifteen per cent. The effect of this falling rate of growth was to lengthen the period during which the population doubled itself. For the two hundred years from 1660 to 1860 the population doubled itself about every 23.5 years. Subsequently the population only doubled itself in the thirty years from 1860 to 1890; and in the succeeding forty years from 1890 to 1930 it did not quite double.

The largest intercensal increase in our history took place between 1920 and 1930, when 17,064,000 persons were added to the population. But this large increase was accumulated in the early years of the decade, and

since 1923, when an increase of 2,119,000 was reported, each subsequent annual increase has been smaller than the preceding year, until in 1932 only about 828,000 persons were added to the population. This annual trend suggests that the rate of population growth will continue to slow up. Any estimates of future growth will depend upon the different trends assumed for birth rates, death rates, and net immigration, which will be discussed later in this chapter. However, in anticipation of what will be said further on this subject, there seems to be no prospect of another doubling of the population. On the contrary there will be a trend toward a stationary or declining population.

NEGROES AND FOREIGN-BORN WHITES

The figures given above are for the United States as a whole, and therefore include all of its inhabitants, regardless of race or nativity. In this chapter particular attention will be given to the white population, including the native and foreign-born elements, because the whites compose the greater part of the total. Before proceeding with the subject, the present section will give a rapid review of the growth and distribution of the negroes and the foreign-born regarded as separate elements of the population. The trends of growth of the negro population do not present any problems of peculiar interest to the student of population. Even the foreign-born element, because of immigration restriction, is becoming of lesser significance as its proportion to the total population declines. The most important considerations relating to the growth and distribution

of the negroes and the foreign-born will be reviewed in this section.

The Negro Element. In 1790, negroes comprised 19.3 per cent of the total population, whereas in 1930 they represented only 9.7 per cent. During this period, with the exception of one decade (1800-1810), the rate of increase among the negroes has been slower than among whites. When the annual rates of 1920-1930 are examined, it is observed that the trend of both rates is downward, the rate for whites falling more rapidly than the rate for negroes.

Negro birth rates and death rates are higher than the rates for whites. The former have followed the same downward trend that marks the course of the white birth rates in the United States and abroad. From 31.3 in 1920, the rate has fallen to 25.4 in 1931. The negro death rate has been uniformly higher than the death rate for the white population in the current death-registration area. In 1929, when the death rate for the white population stood at 11.4, the negro death rate was 17.1. In 1931, the death rate for whites was 10.6, whereas the negro death rate was estimated at 15.9.

The negro population of the United States has always been concentrated in the rural regions of the South. In 1860, over ninety-two per cent of the negroes lived in this region, although in later decades there was a trend toward a wider distribution. In 1930, over one fifth of the negroes, or 21.4 per cent, were residing in other parts of the United States. The movement represented by these figures presents itself in two aspects,

that of a northward migration of negro workers, and an urban movement of rural negroes taking place all over the country. While this movement represents an important shift in population distribution, it has come in response to economic forces, notably the rural-urban movement, to which the whole community has been exposed.

Most significant, from the standpoint of the student of population problems, is the effect of the urbanization of the negro upon the future trends of population growth. Considerable differences exist between rural and urban birth rates and death rates, and between the age composition of rural and urban communities. The significance of these factors will be considered in the next chapter.

The Foreign-Born Element. The foreign-born white element in the population, by the very nature of the definition of this classification, cannot be increased by births. The children of the foreign-born whites are placed by the census in the classification of native whites of foreign or mixed parentage. Consequently, the deaths among the foreign-born can be offset only by immigration, and in consequence the trend of growth of the class depends ultimately upon the volume of immigration to the United States.

In 1927 an excess of deaths over net immigration began, which marked a trend that has persisted ever since. Two factors are mainly responsible, the temporary cessation of immigration during the World War, and the application of restrictive immigration legislation that became effective in 1924. Assuming the main-

tenance of such a policy, the rapid decrease in the number of the foreign-born is to be expected.

The number of children born to a thousand foreign-born women (the specific birth rate) has declined more rapidly among this group than it has among native-born women. This is due to the rapid Americanization of the foreign-born groups, among the ideas and standards adopted being the preference for smaller families. Nevertheless, the fertility rates of the foreign-born are still higher than for the native whites.

It is a matter of common knowledge that the greatest concentration of foreign-born whites is to be found in the Northeast and in the states bordering on the Great Lakes. These are the highly industrialized regions of the United States, with the largest urban growth. In one sense, the present situation is a reversal of earlier trends, when immigrants sought out the virgin farming lands of the West. The "frontiers of settlement" are found today in the large cities. Whatever may be the volume of immigration in the future, it is certain that it will contribute to urban, rather than to rural growth.

DISTRIBUTION OF POPULATION

RURAL AND URBAN GROWTH

The following table presents a picture of the distribution of population in rural and urban communities.¹

¹ Adapted from Thompson, W. S., and Whelpton, P. K., *Population Trends in the United States* (1933), p. 20. This book is one of a series of monographs published under the direction of the President's Research Committee on Social Trends. Reproduction here by permission of the publishers, McGraw-Hill Book Company, Inc.

POPULATION AND PERCENTAGE DISTRIBUTION BY RURAL
AND URBAN COMMUNITIES, 1820-1930
(POPULATION IN THOUSANDS)

	PLACES OF OVER 2,500		PLACES OF LESS THAN 2,500	
	POPULATION	PER CENT OF TOTAL POPULATION	POPULATION	PER CENT OF TOTAL POPULATION
1820	677	7.0	8,961	93.0
1830	1,085	8.4	11,781	91.6
1840	1,973	11.6	15,096	88.4
1850	3,901	16.8	19,291	83.2
1860	6,531	20.8	24,912	79.2
1870	10,095	26.2	28,464	73.8
1880	14,311	28.5	35,845	71.5
1890	22,230	35.3	40,718	64.7
1900	30,296	39.9	45,698	60.1
1910	42,099	45.8	49,873	54.2
1920	54,356	51.4	51,354	48.6
1930	68,955	56.2	53,820	43.8

One of the most significant aspects of the development of the United States is the rapid distribution and growth of population known as the westward movement. The search for greater economic opportunity centered upon the exploitation of the vast agricultural resources provided by the virgin soil of a great continent. The growth of the country in population and wealth was founded upon the basis of agricultural production. Consequently, until the last quarter of the nineteenth century the regions of most rapid growth were to be found along the frontiers of settlement.

Present trends of growth are no longer determined by the search for agricultural opportunities. Agriculture is no longer a positive factor in determining areas of

growth. Mining, manufacturing, and trade are the occupations that attract population today. In general it can be stated that changes in rates of growth of the population of the various states and divisions are to be accounted for by the development of urban concentration in response to industrial and commercial opportunities. This is only another way of saying that dominant economic interests determine the pattern of population growth.

The Rural Exodus. Before proceeding with the analysis of rural and urban growth, it is necessary to define the terms employed by the census. All villages and cities of 2,500 and over, together with certain unincorporated villages and townships in the northeastern states, are classified as urban; all places below this number, as rural. It must be understood that this is a classification based on residence. Obviously, not all residents of rural areas, thus defined, engage in farming as a livelihood, and yet it may be desirable to distinguish the farming population from other elements. Consequently, an occupational classification is provided, dividing the rural population into two groups, the rural farm population representing those practicing farming as a "gainful occupation", and the rural nonfarm population. Beginning in 1920, the increase in population can be classified as urban, rural nonfarm, and rural farm.

In the decade 1920-1930, while there was an increase of almost 2,500,000 in the rural population as a whole, the rural nonfarm population increased by about 3,700,000, but the rural farm population de-

creased by about 1,700,000. It is probable that the rural farm population was smaller in 1930 than it was in 1910. In 1930 the rural farm population was 30,158,000, only 24.6 per cent of the total population. The decrease in absolute numbers of the rural farm population is caused primarily by the migration of farmers to the cities because of the superior economic and social advantages of city life. As a result of these changes in the rural farm population, the total rural population increased by 2,466,000 in the decade 1920-1930, compared with an increase of 14,600,000 in the urban population.

When the depression of the early 1930's brought the inevitable consequences of under-employment and unemployment in the industrialized urban areas, a reversal of the rural farm trend manifested itself in 1930 and subsequent years. In the former year the movement from farms to the cities was the smallest in several years, and the number moving in the opposite direction the largest. The result was a gain of 438,000 in farm population. In 1931 there was an increase of farm population of 648,000. These figures do not imply that the cities actually lost by these amounts. The net loss of urban population was 39,000 and 207,000 respectively. The balance is represented by excess births over deaths in the farming regions that were retained in the rural areas.

It is impossible to foretell whether this reversal of the normal trend will continue beyond the period of the depression. But the evidence indicates that it may not be permanent. Emigration from the cities is to farming regions adjacent to urban centers, and may include

people recently moved to the cities who are returning temporarily to their families or friends because of loss of employment. Furthermore, there is no evidence that the economic factors causing the cityward migration in the past will operate with less force in the future, once a period of full recovery has been reached.

Analysis of Urban Growth. It is evident from 1820 onward (see table on page 98) that there has been a steady increase in the proportion of the population living in urban communities. The large increase represents the cumulative effect of city growth caused by the fact that the number of cities has been steadily increasing. In nearly all recent decades, the rate of growth for the small city has been greater than that for the larger.

The study of the locations of the smaller cities reveals that those undergoing the most rapid growth are located in the neighborhood of large cities, and therefore can be termed satellites. The latter have shown an increase of 36.2 per cent in the decade of 1920-1930 compared with a growth of 19.4 per cent for the non-satellite group. The growth of these smaller cities within the limits of a large metropolitan area is dependent upon the development of communication and transportation represented by the telephone, rapid transit, the automobile, and the public highway. The same general observation can be made of rural areas within metropolitan districts—they have grown more rapidly than rural areas outside the metropolitan areas. These two developments reveal the powers of attraction of population exercised by the big cities.

GEOGRAPHIC SHIFTS IN POPULATION DISTRIBUTION

In previous chapters there was occasion to refer to movements of population as the adjustment of the supply of labor to other productive factors, of which the supply of natural resources is the most important. In response to economic incentives, people may move across territorial frontiers, or the adjustment referred to above may take place within the boundaries of a single country. The effective organization of a national economy depends on the maintenance of the mobility of the productive factors, including the supply of labor.

The constant change in the distribution of the population of the United States has been a dynamic factor of great significance in the development of the country. The movement of people from one region to another, and from the smaller to the larger communities, has been especially marked in a country containing so many situations stimulating internal migration. A constant shuffling of the population is to be expected in a new and progressive country. Earlier population movements came as a result of the search for agricultural opportunities, of which the settlement of the old Northwest and the extension of cotton culture into the Southwest are examples. The exploitation of forest resources and of mineral deposits was accompanied by a distribution of the population dependent upon the development of these resources.

Moreover, the change from an agricultural to a predominantly industrial economy exerted a powerful

effect upon population distribution, to which reference has been made in an earlier connection. And finally, the flow of immigration, contributing to the available supply of labor, has accentuated these predominant trends of migration; and the application of immigration restriction, by reducing the supply of immigrant labor, has stimulated interregional movements from the areas of lesser to those of greater economic opportunity. In this section no attempt will be made to trace historically the complicated movements of population. But a brief presentation of present distribution will be given, with conclusions as to the likelihood of its permanence, and of its significance for future growth.

The Native White Population. The outstanding fact of the geographic distribution of the native white population is that the highest proportion of this group is found in the South, in spite of the large percentage of negroes. The presence of the latter, whether slave or free, has discouraged foreign white immigration. In consequence, the proportion of the foreign white stock (five per cent) is very small. Since 1808 there has been no immigration of negroes into the United States, hence their numbers have been increased only by the excess of births over deaths. Moreover, the whites in the South have maintained a greater natural increase than the negroes. And finally, the migration of negroes from the South to northern industrial centers, which has occurred since 1910, has increased the proportion of whites in the total population of the South.

The smallest proportion of native white stock is found in the New England and Middle Atlantic states, in which the native white element represents 38.8 and 43.6 per cent respectively of the total population of these divisions. In the East North Central and West North Central states is found a larger proportion, 57.3 per cent and 64.3 per cent. The significant fact in connection with these two divisions is that since 1900 there has been a steady increase in the proportion of native whites, due to the decline in immigration. This is indicative of what will happen all over the country if immigration continues to decline; an increase in the proportion of native whites will result. In contrast to the above divisions, the proportion of native whites in the southern division ranges from 65.9 to 70.5 in 1930. The proportion of native whites in the United States as a whole is 57.1.

The examination of the distribution of native whites by size of community bears out the evidence presented in a preceding section, namely that the native white stock predominates in rural districts and small towns. It is true, of course, that throughout our history the rural areas have been losing population to the cities. But the decline in the proportion of the native whites in the rural population has been slower than the decline in the proportion of the total population in rural communities. Similarly, the small cities contain a higher proportion of native white stock than of the total population, although the reverse is true of the larger cities. In spite of the cityward movement of

the rural population, a large part of which undoubtedly consists of native white stock, the rural and small town population of the United States in 1930 was composed mainly of native white stock, in the proportion of 68.1 per cent, compared with 17.4 per cent of foreign stock, and 12.4 per cent of negroes. The significance of this fact is of the greatest importance in the determination of the future composition and rates of growth of the population, and will be referred to in a later section.

AGE COMPOSITION OF THE POPULATION

In a previous chapter it was established that the increase in population of western Europe has been accompanied by declining birth rates and death rates. The most significant effect produced by falling birth rates is the resulting change in the age composition of the population. When the birth rate of a population continues to fall over an appreciable period of time, the first effect is to reduce the proportion of children, which automatically raises the proportion of persons at older ages. As long as such a decline continues, the proportion of children and young adults will continue to decline and the proportion of older people will increase.

A declining death rate accompanying a declining birth rate will hasten the fall in the proportion of children and increase the proportion of older people

because under these conditions a larger proportion of persons born will live to middle life or later. When the population is composed of a relatively large proportion of older people, the downward trend of the death rate will come to an end, and death rates may even rise, in spite of all that sanitation and medical science can achieve. The reason for this is that a population made up of a relatively large proportion of older people contains a relatively large number in those age groups among which the greater proportion of deaths occur.

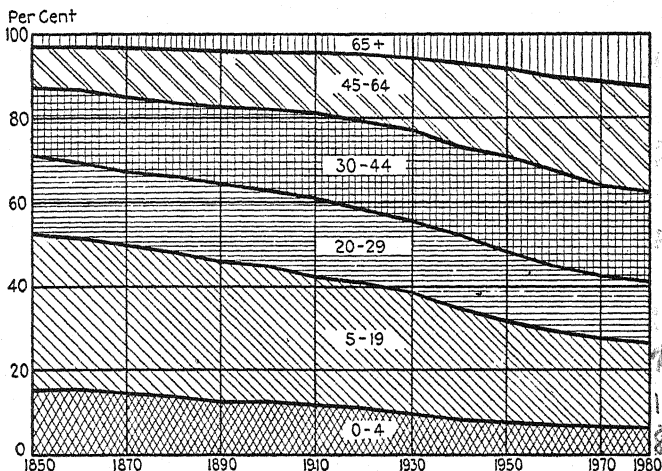
In the United States, especially, immigration has played an important part in determining age composition. Immigrants are usually young adults in the prime of life. Since the greatest volume of immigration occurred in the years preceding the period of the World War, these additions to the population have contributed to the middle-aged groups, and increased the proportion of these groups relative to the rest of the population. Of almost equal significance with immigration is the effect of internal migration on the age composition of the population, when studied by regions or by size of community.

PROPORTIONAL CHANGES IN AGE GROUP

The chart on page 107 illustrates the striking changes taking place in the distribution of the population by selected age periods.² Proportional changes in age groups can be summed up in the statement that the proportion

² From Thompson and Whelpton, *op. cit.*, Fig. 17, p. 108; by permission of the publishers, McGraw-Hill Book Company, Inc.

of the population below the age of thirty is declining, whereas the proportion thirty years of age and above is increasing. The most spectacular change has occurred in the age group of children 0-4 years of age. This decline has gone so far that in the decade 1920-1930



PERCENTAGE DISTRIBUTION OF THE POPULATION, BY SELECTED AGE PERIODS, 1850-1980

there was an absolute decrease of about 129,000 in the number of children 0-4 years of age. The number of children born during 1925-1929 was less than the number born during 1920-1924. The age group 5-19 also shows a steady proportional decline. Quite recently the same trend has been observed in those 20-29 years of age. The relative stability of this group, in face of the decline in the proportion of younger groups, can be accounted for by the influx of immigration, which

is heaviest at these ages, and which reached its largest volume in 1910-1913.

As a result of the decline in the proportion of those below thirty, it is not surprising to find corresponding increases in the proportion of those at older ages. The age group 30-44 has been affected partly by immigration, but to a greater extent by the fact that it is recruited from the larger number of children born prior to 1900. The next group of persons, 45-65, has shown a large proportionate increase; it has doubled in numbers in the last thirty years.

The true picture of the aging of the population is presented most clearly in the change in the proportion of the population sixty-five years of age and over. This group, representing 2.5 per cent of the population of 1840, had more than doubled in 1930 (5.4 per cent). In point of numbers this means that elders are more than ten times as numerous as they were in 1850, whereas the population is only a little over five times as large. If the present trend continues, the proportional changes in this group will be more striking than for any other age group of the population. It is conservatively estimated that the elders of sixty-five and over will represent 12.1 per cent of the total population by 1980.

DISTRIBUTION OF THE POPULATION BY AGE GROUPS

By Regions. The following table presents the percentage of the population by ages and regions in 1930:³

³ Condensed from Thompson and Whelpton, *op. cit.*, Table 33, p. 120; by permission of the publishers, McGraw-Hill Book Company, Inc.

DISTRIBUTION OF THE POPULATION BY AGE GROUPS AND
REGIONS IN 1930

REGION	0-4	5-19	20-29	30-44	45-64	65	TOTAL
NORTHEAST .	8.4	27.7	16.7	22.9	18.6	5.6	100.00
NORTH CENTER	8.9	28.1	16.5	22.1	18.2	6.2	100.00
SOUTH . . .	11.0	33.6	17.5	18.9	14.9	4.2	100.00
WEST . . .	8.2	26.3	16.6	23.2	19.7	6.0	100.00

This table reveals a number of important and interesting variations in the regional distribution of population. The small proportion of children under five in the Northeast and North Center is accounted for by the lower birth rates and the heavier immigration of young adults of the highly industrialized regions with large urban populations. The most striking fact as to the distribution of the younger groups is the predominance in the South of young people under twenty. This larger proportion of young people at the non-productive period of life constitutes a heavy burden on the older groups.

As to the middle-aged groups, the West has a high proportion of adults at these productive ages, to be accounted for in the main by migration from other parts of the United States. At the other extreme, the South is found to have the lowest proportion of adults at productive ages. In 1920-1930 about 420,000 persons between the ages of twenty-five and thirty-four must have emigrated to other regions, and this loss was

not repaired by an influx of foreign immigration.

Regional differences in the distribution of the older groups in part counterbalance the differences in the proportions of young dependents mentioned above. The West has the largest proportion of elders, and the South the smallest. If the number of dependents (0-19, and 65 and over) in proportion to the population of productive age (20-44) is considered, it is found that the ratios for the different regions are as follows: the South has a ratio of 100 persons of productive age to 134 dependents; in the North Center the ratio is 100 to 112, in the Northeast, 100 to 105, and in the West 100 to 102. It is evident that the problem of the care of the young and old dependents is greater in some regions than in others, and that it reaches its most acute form in the South.

✓ *By Size of Community.* The greater proportion of young people below the age of twenty is found in the rural districts. In general, the rule follows that the smaller the community, the larger the proportion of young people. It is greatest in the rural farm population and smallest in the largest cities. On the other hand, the urban migration of rural inhabitants has drawn the larger proportion of young adults in the prime of life to the cities. Chiefly on account of these facts, it is not surprising to find a preponderance of persons beyond middle age in the cities, where they have established themselves during their more productive years.

Certain significant facts emerge from the analysis of the age composition of the population. The causes of

the changes taking place are: a falling birth rate, a differential birth rate between town and country districts, the internal movement of the population, of which the most significant aspect is the rural-urban migration, and changes in immigration policy. The first three factors have been at work for a considerable period of time, and there is no evidence that they will be any less effective in the future. The change in immigration policy is of more recent origin but, as far as one can judge at the present, popular opinion endorses this policy. Consequently, it is not too hazardous to forecast that the trend toward fewer children and more elders will continue.

Certain consequences of these age trends may be of the greatest significance in the development of the country. An absolute decrease in the number of young children may bring about a shift in the emphasis of the program of public education. The fact that the burden of child education and welfare is so much heavier upon those of productive age in the rural districts than it is upon the adults living in cities, indicates that rural education and child welfare should be considered of national rather than of purely local concern. The children of the farms and small villages increase and in many cases maintain the population of the cities. Inferior country schools and standards of child welfare affect adversely the future of the country as a whole.

Turning to the other extreme of the age scale, the aging of the population will have certain consequences on social legislation and industrial policy, as well as more generalized effects. The Social Security Pro-

gram of old age pensions must be established in face of the fact that the 5.4 per cent of the population over sixty-five years of age in 1930 will probably rise to over 12 per cent by 1980. The "dead line" of industrial employment where men over forty years of age are considered superannuated, and their places filled by younger men, will have considerably more significance when 38 per cent of the population will be over forty-five years of age in 1980, as compared with 22.9 per cent in 1930. If the productive power of the older age groups is not used to the full, an increasing proportion at these ages will become dependent or semi-dependent and must be supported in some way along with the naturally dependent young and very old. On the other hand, if the full productive power of the constantly increasing proportion of the population in the productive period of life can be utilized, an increasing standard of living may be expected.

No one can predict the generalized effect of a greater number of older people upon the national character. But the guess may be hazarded that the tendency will be toward a more conservative outlook in which the desire for security will carry more weight than the speculative temper characteristic of a new and rapidly growing country. This change in outlook may possibly affect the character of American business organization and political institutions.

CHAPTER V

Social and Economic Significance of Population Changes

POPULATION statistics for the United States indicate, beginning in 1860, a steady decline in rates of growth. This chapter will describe the part played in this decline by changes in the number and rates of births and deaths, and by changes in the volume of immigration. At the same time, the social and economic significance of these population changes in the United States will be considered.

FACTORS PRODUCING POPULATION CHANGES

The three factors producing population changes are births, deaths, and population movements. In the United States, up to the present time, the factor of population movement has been immigration.

BIRTHS

The analysis of births requires a study not only of the number of births, but also of the birth rate and, particularly, of birth-rate differentials existing among various population groups.

The Increase in Births. With the rapid growth of population in the United States, the number of white children under five increased rapidly, every succeeding decade showing a constant increase over the preceding one. Estimated white births were 239,000 during 1800 and 2,497,000 during 1920.

The trend 1920-1930 is of the greatest significance in that this period witnessed a reversal in the trend that had probably prevailed in all past decades. A larger number of births occurred in the 1920's than in any previous decade; but whereas previous records of decennial growth would in all likelihood have shown a steady annual increase through each decade, the decade 1920-1930 showed a larger number of births during 1920-1924, and thereafter a steady decline in the annual number of births. Moreover, this decline continued in the depression years of the early 1930's. In 1933 the number of births officially reported was less than 2,100,000, compared with the maximum of 2,950,000 in 1921.

The Decline in Birth Rates. The crude birth rate has declined steadily for over a century.¹ The crude rate for the white population has fallen from 55.0 per thousand in 1800 to 26.1 in 1920, and 20.1 in 1930.

¹ The crude birth rate is obtained by dividing births by the total population expressed in thousands.

A more exact comparison of births can be obtained by the use of specific birth rates, that is, the number of births per thousand women of specified ages. Such a rate is free from the distortion produced by changing age composition, which affects crude rates. The birth rate for white women in the age group 15-44 shows an even more rapid decline than the crude birth rate. In 1800 there were 278 births per thousand white women between the ages of 15 and 44, compared with 87 in 1930. The latter rate is about thirty-one per cent of the figure for 1800. Between 1920 and 1930 the rate fell from 113 to 87; on a relative basis this represents a decrease of twenty-three per cent, the largest that has ever occurred in a single decade.

Another device for measuring long-run trends in population growth is that of "net reproduction rates" described in the previous chapter. This is a measure indicating whether the present generation of mothers is supplying a sufficient number of children in the next generation who in their turn will survive through the childbearing period.

The most recent data indicate that the net reproduction rate of the white population of the United States declined from 1.128 in 1925 to 1.049 in 1928. The latter figure, showing a rate above replacement needs of only 0.049, indicates that at the end of the decade of the 1920's the United States was steadily approaching a reproductive equilibrium. Moreover, in subsequent years the rate has fallen below unity, standing at 0.997 in 1932 and 0.961 in 1935.² Since a net reproduction

² Cf. *Population Index*, Vol. III, pp. 149 and 214.

rate below unity represents a population that is failing to replace itself, the figures last cited imply that at the rate at which children are now being born, the number of women of childbearing age living some thirty years from now will be smaller than the number of such women at the present time, leaving out of account possible changes in immigration and emigration.

Birth-Rate Differentials. Confining attention to the decade 1920-1930, this period showed a general decline in the number of births, beginning in 1921. In the various geographical divisions of the United States, the decline in specific rates and net reproduction rates was accelerated. The only exception is the New England division. The slight increase to be found there is due to the fact that falling fertility manifested itself at an earlier period in that division, so that a tendency toward stabilized fertility among the native whites is now becoming evident. Three divisions, New England, the Middle Atlantic, and the Pacific, have net reproduction rates below the replacement level.

In general, net reproduction rates are higher than the replacement level in the more rural parts of the country, and in the South. The great difference in fertility of urban and rural communities has been the subject of frequent comment. This differential has existed for well over a century. Between 1920 and 1930 the native white rural population declined more rapidly in fertility than the native white urban residents. In spite of the more rapid decline in rural than urban fertility, the differential between the two rates remains very large. In 1930 the rural ratio of children under five for the

total population was 660 per 1000 women aged 20-44, more than fifty per cent above the highest urban ratio (436 in cities of 2,500 to 25,000). In general it can be said that the ratio falls with the increase in the size of the community. Thus in 1930 the ratios were as follows: farm population, 730; rural nonfarm, 584; towns, 2,500-25,000, 436; 25,000-100,000, 386; 100,000-250,000, 378; 250,000-500,000, 330; 500,000 and over, 343.

The significance of these ratios for future growth of population is demonstrated by a table of reproduction rates per generation for the white population of the United States. Such calculations yield the following reproduction rates for classifications of the white population by size of community, 1930:³

CITIES

500,000 and over . . . . .	.78
250,000-500,000 . . . . .	.76
100,000-250,000 . . . . .	.87
25,000-100,000 . . . . .	.89
2,500- 25,000	1.00
TOTAL URBAN . . . . .	.87
RURAL.	1.47
URBAN AND RURAL NONFARM COMBINED	1.03
RURAL NONFARM	1.33
RURAL FARM	1.62

From this table the conclusion is warranted that only the rural communities and villages and towns of 2,500 to 25,000 have fertility rates sufficiently high for replacement, with a margin above this for population growth, while the larger cities and metropolitan areas are not providing for the maintenance of their populations. This rural-urban differential is the most con-

³ Lorimer, Frank, and Osborn, Frederick, *Dynamics of Population* (1934). Condensed from Table 7, p. 28; by permission of the authors.

spicuous phenomenon of the geographical distribution of the population of the United States. The more rapid decline in rural fertility rates than in urban rates in the last decade indicates that this differential may not be so great in the future, but it is unlikely that it will ever disappear entirely.

SOCIAL SIGNIFICANCE OF GROUP DIFFERENTIALS

These differential rates of growth must be examined as to their extent, their consequences for future growth, and their social and biological effects, in so far as these can be scientifically determined. In this section, consideration will be given only to variations in reproductive rates classified by regions and by social classes in the United States.

It is fundamental to social welfare that each generation should transmit unimpaired its heritage of culture and intelligence. This is considered essential to any country aspiring to democratic government and the maintenance of free institutions. It is pertinent therefore to inquire as to the quality of the population, and more particularly, as to whether the persons who will make up the population of the future are born and nurtured under conditions favorable to the maintenance and development of the highest cultural and intellectual levels.

In order to determine how variations in fertility may affect the future social heritage of the nation, it is necessary to formulate some standard by which intelligence may be measured. Much fruitful labor has been

devoted by psychologists to the organization of "intelligence" tests, but it would be a mistake to infer from the title that they measure intelligence in the sense of inherited capacity divorced from all environmental influence. "Intelligence", as measured by such tests, is partly a product of environmental forces. It may be concluded that every such test elicits responses affected by hereditary factors as developed in a given environment. It would be better to refer to the conclusions drawn from such tests as indices of "cultural-intellectual development", and thus avoid the implication that "intelligence" tests somehow measure innate abilities exclusively. Since, for the moment, social heritage alone is being considered, it is appropriate to use indices of "cultural-intellectual development", without attempting to determine the relative importance of hereditary and environmental factors involved.

Regional Variations in Cultural-Intellectual Levels.

A graphic presentation of the effects of different cultural levels in the United States on the future social heritage of the nation is presented in Lorimer and Osborn's demographic map of cultural-intellectual development.⁴ In presenting a composite picture, by states, of different levels of culture, the authors have chosen such standards of measurement as the scores made by the drafted men in the army psychological tests applied during the World War, magazine circulation, the contribution of the various states of citizens listed in "Who's Who", and native white illiteracy. The map is completed by the determination of an average composite score based on

⁴ Lorimer and Osborn, *op. cit.*, Chapter IX

these standards, and applicable to every state in the union.

The next step is to superimpose on the map of cultural-intellectual development the rates of natural increase or decrease of the population by states, which represent the rate of population change per generation. The two sets of data therefore show the relationship between regional variations in reproductive trends and regional variations in the level of cultural-intellectual development by states, as of 1920. With discouraging uniformity the map shows that the largest increments of population growth come from the states with the lowest levels of cultural-intellectual development, whereas the states standing highest in this respect have reproduction rates either barely sufficient for replacement, or below replacement needs.

The authors conclude that their study presents evidence that . . . "for some time a disproportionate share of successive generations is likely to be drawn from areas that are now characterized by rather low cultural-intellectual development and poor educational opportunities. The effect of this tendency on the cultural and political life of the nation cannot be lightly gainsaid."⁵ It must be borne in mind that no judgment is being made of the biological significance of this negative association of cultural-intellectual levels and reproductive trends. What this study emphasizes is that the cultural level of each generation determines to a large extent the environmental factors that will affect the intellectual development of the next generation. Nor can anyone

⁵ Lorimer and Osborn, *op. cit.*, p. 184

question the fact that the cultural standards of parents, which determine the home environment, are at least as important an element as formal education in the intellectual development of the child. The conclusions reached raise the issue whether the existence of areas of low cultural-intellectual development should not become a matter of national concern, in view of the fact that the present pattern of population growth is causing a disproportionate spread of lower culture levels. Where such levels exist, a vicious circle is established. Retarded development encourages the maintenance of high fertility, and excessive fertility tends to retard economic and cultural development. Farsighted economic planning may be necessary to break this circle.

Variations in Cultural-Intellectual Levels among Social Classes. Both in Europe and in the United States a considerable body of statistical evidence has been accumulated on the differential birth rates of groups of different social levels, and on "intelligence" ratings of school children from different racial or social groups. Only the general conclusions drawn from such studies can be cited here. It is generally accepted that there is a positive association between social status and cultural-intellectual levels. Wherever social status is measured by income or occupation of the father, it is to be expected that greater ease of life made possible by larger incomes will produce better environmental conditions in home life, schooling, and so forth. It has been equally well demonstrated that there is a negative correlation between fertility and social status, that is to say, the higher the social status the lower the fertility rates.

The two series combined furnish the basis for a study of the effect of differential birth rates on the distribution of levels of cultural-intellectual development in successive generations. The conclusion to be drawn is that there is a tendency toward a gradual lowering of the average cultural-intellectual level as an effect of present reproductive trends among different social groups.

This conclusion may have no biological application; but even so, the effect on social heritage is serious enough. Families whose economic position enables them to transmit to their children the best advantages that our civilization offers are making only a small contribution to the future population, whereas the poorer families, with low cultural levels, make the largest contribution. This trend is just the opposite, in its effects on social heritage, to the one that an enlightened social policy should aim to establish.

DEATHS

The United States has been slower than the European countries to organize comprehensive and accurate statistics on deaths. The Bureau of the Census began, in 1910, the collection of such statistics in a limited area comprising the original death-registration states,⁶ and from 134 cities outside these states situated for the most part in the Middle Atlantic and East North Central divisions. By 1929 the death-registration area included the entire population except certain rural areas and smaller cities in South Dakota and Texas. For statistics of deaths

⁶ The New England States, New York, New Jersey, District of Columbia, Indiana, and Michigan

in the white population prior to 1900, students must refer to reports from states or cities. Those from Massachusetts are considered the most accurate, and give the earliest reports available, going back to 1789.

The Crude Death Rate. The Massachusetts record from 1789 to 1931, which can be assumed to be fairly typical of the country as a whole, shows a phenomenal decline in the crude death rate.⁷ It fell from 27.8 per thousand in 1789 to 11.4 in 1931, a decline of sixty per cent. The rate of decline has been twice as rapid during the period following 1890 as it was during the preceding period, 1789-1890. This downward rate corresponds closely to that occurring in the original death-registration area since 1900.

The remarkable achievement of the progress in sanitation and medicine is thrown into sharp relief by the figures for the number of deaths in the United States. From 1910 to 1931 there was only a slight increase in the number of deaths per annum. For two thirds of this period the variation was between 1,490,000 and 1,380,000. This result was obtained in spite of the fact that the population increased from about 92 millions in 1910 to over 123 millions in 1931.

In connection with crude death-rate trends, it should be pointed out that a continued decline is not to be expected. The low rates prevailing today in the United States and the countries of western Europe are possible because the population has increased very rapidly in the recent past, so that the age groups are favorable

⁷ Obtained by dividing the total number of deaths by the total population and expressing the results as deaths per thousand persons

to a low crude death rate. When these populations grow more slowly, or reach a stationary state, a corresponding change will occur in age composition. When the proportion of older people increases, the death rate is bound to rise, for it is among the older groups that the greater number of deaths occur.

Specific Death Rates. A more accurate conception of mortality trends is provided by specific death rates, that is, the deaths in a given age period divided by the population in that age period, and expressed as the number of deaths per thousand persons of that age. In this manner it is possible to discover at what ages the greatest saving of life has taken place, and to determine where in the future the greatest effort should be centered in order to reduce further the incidence of mortality.

When this measure is applied to the Massachusetts figures, it is found that there has been a consistent decline in specific rates at most ages. But the decline has not come about by equal reductions at all ages. The declines are far greater for the rates of infants in the first two years of life. The rate for children under one year of age declined from 155.1 in 1855 to 61.8 in 1929; the rate for children at the age of two declined from 40.0 in 1855 to 5.5 in 1929. At older ages the decline is proportionately less with advancing age. Only a small decrease has occurred between the ages of fifty and sixty. Between sixty and seventy the trend has fluctuated but was no lower in 1929 than it was in 1855. Rates above seventy have fluctuated, although averaging somewhat higher in the more recent life

tables. Modern science and sanitation have not increased the life span. The conclusions reached from the Massachusetts figures are substantially confirmed by the later records from the death-registration areas.

The saving of life revealed by the decline of specific death rates, taking place throughout the nineteenth century in western Europe and the United States, establishes the fact that the control of infant and child mortality has been the most important factor in the growth of population in lands inhabited by Europeans and their descendants. The reduction of infant and child mortality in many countries has gone so far that it is doubtful whether further large gains can be achieved at these ages.

The probability is that if the death rates are to be further reduced in the future, a greater effort must be made to reduce the number of deaths of the middle-aged and older adults. In the future the effort of science to prolong life must make headway against the degenerative diseases that cause a much higher proportion of all deaths now than formerly.

Thus the changing age composition of the population, the approaching limit to the reduction in infant and child mortality, and the difficulties in the way of the effort to reduce mortality in later years, point to the fact that specific death rates will decline more slowly in the future, and that this decline may not be sufficient to offset the effect of age composition on the crude death rate, with the result that a rise may be expected in the latter.

THE TREND OF BIRTHS AND DEATHS

What assumption as to future trends can be made on the basis of the trends observed in the past? Births are subject to human control to a much greater extent than deaths. The spread of the knowledge of contraceptives over larger population groups presents the *theoretical* possibility of a birth rate approximating zero. There is justification for believing that differences in the number of births in country and town, and differences between more accessible and less accessible rural areas, are closely related to the extent and spread of knowledge of contraceptive methods. The present rapid decline in rural fertility rates may be accounted for by the diffusion of information facilitated by the modern developments in transportation and communication serving to bring city and country into closer contact.

However, such an extreme decline is hardly likely to occur. It has already been observed that certain communities, where declines began prior to 1900, provide evidence to support the idea that such communities have reached a point of stabilization in fertility rates such as has occurred in France. Nevertheless, the decline of American fertility has been accelerated, for the country as a whole, during the last decade. The flexibility of the birth rate is significant in view of the relative stability in mortality during the last few decades. It is difficult to say how rapidly the birth rate will continue to fall and at what point it will become relatively stable.

The significant fact with respect to the death rate

is that the total number of deaths each year has remained fairly constant. The number of deaths 1930-1932 was practically the same as in the late pre-war period. Human control over the death rate can achieve results within rather narrow limits. The death rate can never fall to zero, since mankind cannot expect to live forever. The utmost that can be achieved is an increase in the average expectation of life, somewhat above the sixty years which at the present time a person may, on the average, expect to live.

Coincident with the fairly constant number of deaths, a steady decrease has taken place in the number of births. While the total population is still growing, the margin between total births and total deaths is narrowing each year. The decline in net reproduction rates, which takes vitality and mortality into account, is evidence that the decline in population growth is caused by the more rapid decline in specific birth rates than in specific death rates. The United States is so close to a reproductive equilibrium that the increase now taking place can be attributed to an age distribution extremely favorable to population growth.

IMMIGRATION

In a country like the United States the growth in population cannot be considered solely in terms of the annual excess of births over deaths. Growth in numbers is a composite of natural increase plus immigrant arrivals minus emigrant departures, or *net* immigration, for any given period.

The Volume of Immigration. From 1820 to 1930

the greatest migration of population known to history brought 37,950,000 immigrants to the United States. In the thirty-year period from 1890 to 1920 about 18,000,000 aliens gained admission. The highest figure for any single year occurred in 1907, when 1,337,000 immigrants were admitted; however, more than a million immigrants annually were admitted in 1910, 1913, and 1914.

The World War served to provide an effective barrier to international migration, in consequence of which the number of admissions fell below 150,000 for two successive years in 1918 and 1919. Thereafter heavy immigration was resumed in 1920 and 1921, when admissions totaled respectively 427,000 and 802,000.⁸

Since the adoption of an immigration restriction policy by the United States Government, as embodied in the temporary Percentum Limit Act of 1921 and the Immigration Restriction Act of 1924, the ebb and flow of the immigrant tide in response to changing business conditions, typical of earlier periods, no longer prevails. The quota restrictions embodied in these acts set limits to the range of the fluctuations of the movements of immigrants. Federal policy has replaced economic opportunity as the barometer of immigration. In spite of an increase in immigration from Canada and Mexico (the quota provisions did not apply to countries of the Western Hemisphere), the annual number of admissions averaged around 300,000 for

⁸ For the significance of migration movements to international economic organization, see the *Introduction*, above, pp. 9-14.

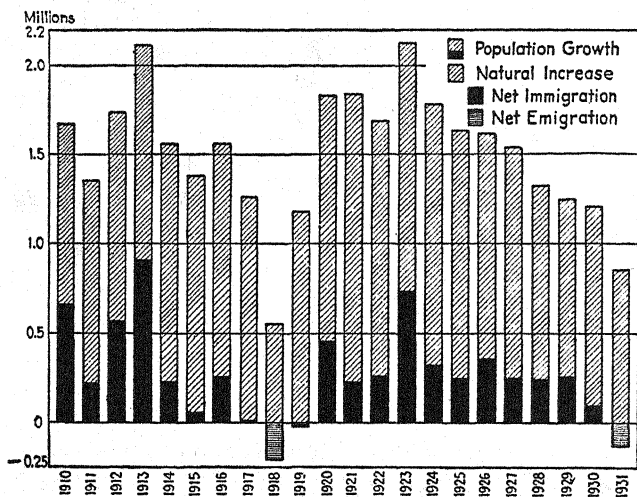
the period of six years from 1925 to 1930. Canadian and Mexican immigration represented on the average about forty per cent of the total immigration during this period.

The advent of the depression of the present decade inaugurated a new chapter in the history of immigration into the United States. The fundamental law controlling immigration remains unchanged, but a greater degree of restriction has been obtained by a rigid administrative interpretation of requirements for admission. In this manner, through the strict administrative interpretation of physical, mental, or moral requirements, through the literacy test, and particularly through the requirement that aliens cannot be admitted who are "liable to become a public charge" (the so-called L.P.C. clause),* virtual exclusion has been secured. During the last few years, beginning in 1931, the United States has become a country of net emigration. In that year alien departures exceeded arrivals by 10,000. In 1932 the net departures had increased to 112,000.

The general trend of net immigration has been similar to that of immigrants arriving, except that the total net movement is smaller, and that the maximum number appears in slightly different years. The largest net addition in any one year was 817,000 in 1910, followed closely by the figure of 815,000 for 1913.

Annual Natural Increase and Net Immigration. An interesting question arises as to the extent to which natural increase and immigration have contributed, respectively, to total population growth. Such estimates

have been presented by Thompson and Whelpton, who reach the conclusion that immigration has played a relatively small part directly as compared with natural increase in contributing to the population growth from 1910 to 1931. The results of their study are shown in the following figure.⁹



POPULATION GROWTH FROM NATURAL INCREASE AND NET IMMIGRATION, 1910-1931

From 1800 to 1830 immigrant arrivals represented less than five per cent of the population growth of these decades. In the next decade, 1830-1840, less than fifteen per cent of the growth came from immigrant arrivals, while from 1840 to 1910 the average for the period

⁹ From Thompson and Whelpton, *Population Trends in the United States*, Figure 34, p. 300; by permission of the publishers, McGraw-Hill Book Company, Inc.

was thirty-three per cent. Since 1910 an average of not more than twenty per cent was contributed by immigration.

It has been argued that immigration does not reinforce the population, but merely serves to replace the natives by foreign elements. According to this contention, it promotes this process of substitution by causing the native birth rate to fall as a consequence of the pressure of immigrant competition on the native worker. However, those who have followed the account of the trend of births set forth in this and preceding chapters are forced to the conclusion that the decline is due to factors other than immigrant competition. Furthermore, authorities have been able to show that even if the birth rate had remained constant for each decade, immigration actually contributed a net decennial increase to population greater than the additional births which would have resulted from a stabilized birth rate.¹⁰

ESTIMATED FUTURE POPULATION

ESTIMATE OF GROWTH

Students of population trends have devised a method of estimating future population growth, based on separate assumptions for the future trends of birth rates, death rates, and net immigration. The past trends of these component factors in population growth have been reviewed in previous sections of this chapter. For the purpose of estimating future population growth,

¹⁰ Thompson and Whelpton, *op. cit.*

how should these trends be projected into the future? Should they proceed on the assumption that the direction of trends recorded in the past will continue to be the same as in the past, or should they assume, on the basis of present indications, an accelerated or retarded rate of change?

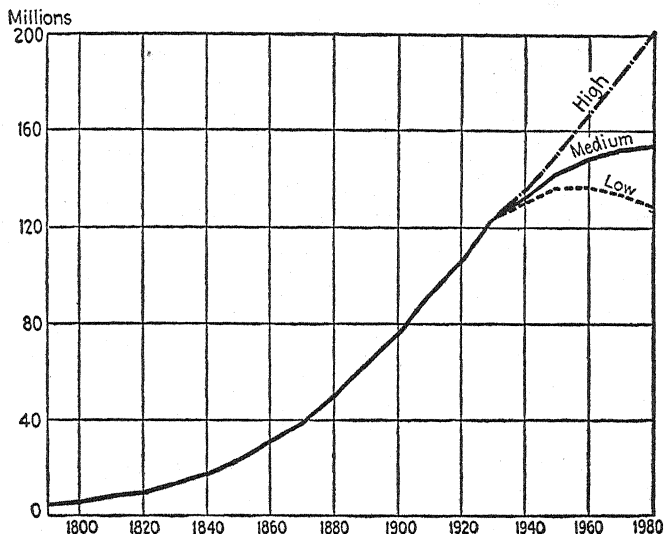
Birth rates, expectation of life, and net immigration are highly variable factors of growth. Immigration is altogether a matter of federal policy, and the future course of that policy is anybody's guess. The size of the American family, and the determination of the number of children a married couple wishes to rear, is a highly individualized problem determined by the complicated reaction of parents to a multiplicity of environmental influences affecting their choices and standards. The expectation of life, on the other hand, is the least variable among these factors, because less subject to human control. The method of calculation that has been devised is designed to take account of possible variations in these component factors of growth. Several computations can be made, each based on different assumptions as to probable future trends of births, deaths, and net immigration. The result of such computations is presented in the figure on page 133, where "high", "medium", and "low" estimates are given, based on three different assumptions as to trends of births, deaths, and net immigration.¹¹

Alternative Estimates of Future Growth. On the basis of the "high" assumptions, population will increase

¹¹ From Thompson and Whelpton, *op. cit.*, Figure 36, p. 315; by permission of the publishers, McGraw-Hill Book Company, Inc.

at a rapid rate and will exceed 200 millions in 1980 with a continued growth for several decades thereafter.

Under the "low" estimate, the population will increase slowly to about 138 millions between 1955 and 1960, and then gradually decline, reaching the figure of 129 millions in 1980.



POPULATION OF THE UNITED STATES, 1790-1980
(Future estimates on three assumptions)

According to the "medium" estimate, growth will slow up gradually so that in 1980 the population will be almost at its maximum of about 155 million persons. Specific birth rates are expected to decline somewhat more slowly than under the "low" assumption. The number of births resulting will be closer to the

"low" than to the "high" assumptions. The "medium" assumption as to mortality considers the fact that differences in climate, in industrialization, and in urban concentration will prevent the attainment in the United States of the high average life expectancy prevailing in New Zealand, used as a basis of calculation in the "high" estimate. The average for the United States may be expected to reach 64.7 years in 1950, but probably will never exceed 66 years for the white population. The contribution of immigration under this "medium" assumption will be at the rate of 150,000 after 1940.

Probable Future Trend. The authors of these estimates believe that future growth is almost certain to be less than the figures given in the "high" estimate, and may be higher than represented in the "low" figures. The "medium" assumptions as to births and deaths are nearer to those on which the "low" estimates are based; nevertheless, at the time of the publication of their conclusions they were of the opinion that the "medium" estimate of 155 million persons in 1980 was more likely to overstate probable future growth than to understate it.

Population changes occurring in 1920-1933 were below the "medium" estimate. The total number of births in 1933 was reported to be less than 2,100,000; this figure might be increased by 100,000 to allow for nonregistration of births. Even so, the corrected total of births for 1933 is below the "medium" assumption for 1934. Present indications are that population growth in the next few decades will run somewhere between

the paths charted by the "medium" and the "low" estimate.¹²

*ECONOMIC CONSEQUENCES OF THE
DECLINE IN POPULATION GROWTH*

The phenomenally rapid growth of the United States has cast a strong spell over the minds of her citizens. It is essential to understand its effects on prevailing attitudes and scales of value, because these, in turn, influence the character of the institutions that provide the practical means for the expression of the ideals and aims of the community. Americans, to a greater degree than other nations, have been preoccupied with "bigness." In the past, rapid growth of the population has been accompanied by a rising standard of living for the masses, and in consequence it is natural that a rapid increase in numbers has come to be associated with progress and prosperity. Furthermore, men are prone to assume the identity of their own interests with the public welfare. When a growing population supplies a large number of unskilled workers and a constantly expanding domestic market, business men are likely to assume that any other situation would be disastrous to the national welfare. To them, a stable population means stagnation.

From the standpoint of social welfare, a decline in the rate of population growth, and the eventual attainment of a condition of relative stability, does not necessarily imply a decline in prosperity. The problem must be examined in the frame of reference of the

¹² Cf. Lorimer and Osborn, *op. cit.*, pp. 3-6.

optimum density theory, where the welfare optimum is achieved by a proper balance in the factors of population, resources, and the technical equipment of society. If technological advance continues, and the manner of the distribution of the national income provides increasing purchasing power for the masses, and industry is intelligently directed toward the adjustments necessary to meet the changing conditions in production and marketing, it is reasonable to expect an increase in per capita real income and welfare.

Probable Readjustments in Specific Industries. The declining rate of population growth, in the presence of vast stores of durable goods, technical equipment, and tools for production already saved, may hold out the promise of better wages for the masses of the population. Nevertheless, this may be in part offset by increases in per unit costs of some types of mass-production goods which have in the past kept such unit costs low by reason of the increase in volume of production for ever-expanding markets. Problems of re-investment of the funds of enterprise and of the investment of new savings in production for a much less rapidly growing population will be quite different from such problems when enterprisers were assured of the large annual increments to the population of the past. The shift from rapid increase to a slower rate of growth in population will have certain serious consequences for industry.

In the first place, business organization will have fewer additional customers. Between 1920 and 1930, seventeen million new customers were added to the

population. If no more than ten million are added in the succeeding decade, and declines continue thereafter, it is obvious that business cannot rely on the additional consumption of new customers to the same extent as in the past. An intensification of competition may result, leading either to further monopolistic control, or to greater efforts toward the lowering of costs through greater efficiency of production.

In the second place, the decline in population growth may require readjustments in certain industries, according to the degree such industries are dependent on population growth for the maintenance and expansion of their markets. Adjustments will be more difficult in industries undergoing rapid technological improvements, with a large investment of capital per unit of product, and producing commodities subject to an inelastic demand. Agriculture, unfortunately, is in this category. The construction industries must also be included, as well as the real estate business. These can hope to expand only as population grows, unless a program for the provision of better houses, rather than more of them, and the elimination of city slums is undertaken to counterbalance the loss of markets caused by declining rates of growth.¹³

On the other hand, there are many industries, possibly the majority, that are more independent of population growth, whose products can be sold in greater quantity if consumer purchasing power is increased.

¹³ This statement does not preclude the possibility of a very marked building boom in the next few years due to the appearance of shortage resulting from the long years of the depression; the discussion is intended to refer to the long run.

In the main, such industries manufacture products that cannot be regarded as necessities of life. An increase in the per capita income of the population would develop customers from persons and classes hitherto excluded from the market; and further progress towards greater equality in the distribution of income would still further increase these numbers. Upon such developments must industry depend for an expanding market under conditions when the population growth is declining.

It must be noted that the preceding discussion has concerned itself with the readjustments made necessary by a decline in the rate of growth in population, which is not the same thing as an absolute decline in numbers. Should the population actually begin to decline absolutely, the required readjustments in the industries and finance of the modern economic system would be much more drastic. It is not intended here to discuss the latter, since the questions as to when the population will decline, and whether it will decline, are matters of conjecture. On the other hand, the decline in the rate of growth of population has already begun; and the economic problems related to it will face the present generation.

Change in Social Outlook. Prospective changes in industrial and business organization have been presented only in the barest outline, the purpose being to suggest that the future planning of economic and social life must take into consideration changes in rates of population growth. The present slowing up of growth may produce effects on the national outlook

that will facilitate the social and economic adjustments inevitable in the near future, should the slower growth continue. If Americans should give up their preoccupation with the quantitative aspects of their civilization, more attention might be given to the quality of living. More emphasis might be placed on ways and means of organizing more effectively in order to secure a better life for the average man. The period of adjustment to slower rates of growth which the United States is just entering will involve problems as numerous and as complex as it has faced in the past during the era of rapid population growth and expansion. But the problems will be different, and will require a different mental outlook from that which has prevailed in the past. The abandonment of rapid growth and bigness as an ideal may lead to the adoption of a standard of social welfare as the truer measure of progress; and it may be that the "new frontiers" in this different type of development will prove to be as alluring and perhaps as "profitable" as were the frontiers of the nineteenth century.

CHAPTER VI

Natural Resources

THE support of a population of whatever size depends upon the supply of the means of life furnished by the available and known natural resources accessible to it. When the entire period of recorded history is considered, one must conclude that the cultural levels attained by societies in the various stages of human development depend in large measure on the state of the arts by means of which such civilizations attain mastery over their physical environment. Consequently, the greater the success in adapting material things to human uses, the higher will be the level of culture prevailing at the time. These elements of the physical environment, consisting of useful or potentially useful things, comprise the natural-resource base of human society.

It is a truism to say that population cannot increase beyond the capacity of natural resources to support it. Human beings everywhere depend for subsistence on the utilization of land. The subject matter of the present chapter is concerned with the problem of the

amount and distribution of natural resources throughout the world, the effects of dynamic changes in methods of utilization in recent times, and the implications of these changes with respect to population growth and welfare.

The most obvious fact with respect to land is its extension in space. From the dawn of history the land surface has been used by human communities for hunting or pasturage and agriculture. The forests provided the earliest materials for primitive industries and for the support of game. On the other hand, later stages of human progress made increasing use of materials found below the surface of the land. A classification based on these components of the resource base will be applied in this chapter. The land surface yields vegetable and animal goods, and in addition, the cotton, wool, and silk fibers, and the varied products so essential to a civilized life. The subsurface provides a wealth of mineral resources, the foundation of the modern industrial structure.¹

AGRICULTURAL RESOURCES

The Malthusian analysis takes only a part of the natural-resource base into account. The term "subsistence" as used by Malthus includes only the supply of food necessary for the maintenance of life. This rigorous exclusion of other aspects of the supply of natural re-

¹ In this chapter only vegetable and animal foodstuffs will be discussed. For a discussion of forest resources see McIsaac, A. M., and Modlin, G. M., *Social Control of Industry*.

sources is not so damaging to his theory as might appear at first sight. Granting his assumptions as to the principles governing the increase of numbers and of subsistence, the inability of the food supply to keep pace with population growth would undoubtedly be the great and final obstacle to further increase. As pointed out elsewhere, the weakness of his position lies in the assumptions on which his principle of population is based. In the chapter on population growth, an examination was made of the Malthusian assumptions as to the character and rate of the increase of numbers. In this section criticism will be directed toward his doctrine of the relation of subsistence to population growth.

ELASTICITY IN THE UTILIZATION OF LAND

The position of Malthus was predicated on the fixity of the supply of land, which in turn limited the supply of food. But from the standpoint of the population problem, the physical extension of the land area is of far less significance than the possibilities of the utilization of land. If a given land area can be made to yield twice the former product under new methods of cultivation, the same result is achieved, from the standpoint of subsistence, as if by some miracle the land area had been doubled, while the art of cultivation had remained stationary.

Herein is revealed the inadequacy of the Malthusian analysis with respect to subsistence. According to the doctrine, the only notable addition to subsistence could come from the plowing of additional land. The arts

of cultivation were regarded as relatively static. Modern studies of the food factor in the population problem emphasize the elasticity in the supply and uses of land, through the application of the principle of the substitution of factors, the contribution of invention, taken in its broadest meaning of the progressive development of human control over nature, and the possibilities of international trade.

CONTRIBUTION OF SCIENCE AND INVENTION

The significance of these factors can be more fully appreciated from a review of the contributions of applied biology, aided by mechanical inventions. From the standpoint of the biologist, the subsistence side of the population problem involves interferences with the selective processes that existed before man became a directing force in the further evolution of living matter.² These interferences may be classified under three heads: First, man can control the physical agencies that limit the survival and quality of the species of plants or animals that serve his needs. Secondly, he can eliminate the species that compete with him for the means of subsistence by preying upon the species of use to man. And in the third place, he can undertake the selective improvement of the species that at one level or another contribute to the support of human life.

Concerning the first, it is only necessary to recall the developments in the field of soil chemistry, the control

² Charles, E., *The Twilight of Parenthood* (1934), Ch. I, *passim*

of moisture through drainage and irrigation, and the production of chemical fertilizers. Another line of advance is in the development of drought-resisting plants.

The elimination of species that compete with man calls attention to the losses inflicted by weeds, parasites, and pests on the species that are useful to man. The agricultural losses from the last two alone have been estimated to be in the neighborhood of twenty-five per cent of world production. Scientific agriculture wages unremitting warfare against such pests, by the development of fungicides and insecticides, by the method of hyperparasitization, and by genetic selection for immunity.

The third method of control calls attention to the selection of high-yielding varieties of plants or animals. The development, from the crossing of two other varieties, of the Marquis wheat which matures in 103 days, has made possible the extension of the wheat-growing area in North America from the wheat belt of the United States across the prairie provinces of Canada. In animal breeding great strides have been made in the selection of early breeding varieties, and in the increase of the proportion of meat or milk to the feed required.

What has been said above illustrates the high degree of elasticity in the uses of land resulting from the application of scientific knowledge to agriculture. Mechanical inventions have materially furthered this development. The steamship and the railroad, together with the means of communication, have afforded access

to new and fertile regions of the world, which have added immeasurably to the world supply of foodstuffs. Besides the opening up of new lands, many inventions have introduced economies in the use of land. For instance, since the World War the introduction of the tractor in the United States has released some twenty million acres from the production of oats formerly used for the maintenance of horses and mules. Thus, additional land is now available for production more directly associated with the support of human beings.

In summarizing the achievements of biology and mechanical inventions, it is well to notice that those of the former, particularly, are today applied only in certain localities. It is undoubtedly true that if mankind exploited to its fullest extent the stock of scientific knowledge now available, food production could be increased many times without resort to new lands. Even if population were to increase for a century to come, the pressure of population on subsistence might not establish the level of a minimum of subsistence.

As a matter of fact, the expansion in the supply of the necessities of life has more than kept pace with the growth of population. Increase in numbers has been accompanied by larger output, higher real incomes, and rising standards of living. Two causes account for this fortunate situation. In the first place, scientific progress has effected an absolute economy in the use of land, by means of technical inventions and improvements, and developments in the science of agriculture referred to in the preceding paragraphs. There is no reason to suppose that this manifestation of human intelligence and

ingenuity has reached a limit. The progress of science and the general decline in the rate of population growth indicate that whatever problems the future may have in store, they will not originate in the failure of agricultural resources to supply the needs of the population of the world.

In the second place, international trade has made available to countries in which land is a relatively scarce factor an abundant supply of agricultural commodities from countries more abundantly supplied. In such countries, agricultural production on a large scale can be carried on more effectively and at lower cost than in the countries with deficient land resources.

AGRICULTURAL COMMODITIES IN INTERNATIONAL TRADE

The failure of Malthus to recognize the importance of the effects of technical progress on productivity accounts in part for the limited usefulness of his doctrine to the student of modern population problems. Because of this weakness, his doctrine placed an undue emphasis on the limitation of the supply of land. Another cardinal weakness is the absence of any stress on the possibilities that exist in industrialization and international trade. Both these defects may be traced to a disposition to underestimate the importance of inventions and improvements in the arts.

With respect to the subject of international trade, Malthus gives the impression that he is expounding conditions peculiar to an isolated state, within whose boundaries population must be brought into balance

with subsistence. His attitude may have been colored by the fact that, at the time he wrote, England was in a condition of virtual economic isolation caused by the Napoleonic Wars. Economic self-sufficiency may have appeared, if not desirable, at least inevitable. And furthermore, even in time of peace, international trade in his day was of small dimensions.

Considerations presented in the introductory chapter clearly indicate that movements of factors of production or commodities, or both, have an important bearing on the problems created by the limitation in the supply of land lying within the boundaries of different nations. The movement of factors tends to offset the inequalities of the distribution of land areas with respect to population. And movements of commodities between regions and nations serve to increase the effective land supply of nations insufficiently equipped with agricultural resources. Standards of living have advanced as a result of the development of an international economic system based originally and predominantly on the exchange of commodities between the manufacturing and the agricultural regions. If further evidence needs to be produced, the development of the British Empire affords a convincing illustration.

It will be superfluous to bring forward any further arguments in support of this position. A careful reading of the introductory chapter should make it sufficiently plain. However, the need for emphasis on the importance of international trade as an aspect of the population problem arises from the fact that in many

discussions concerning population pressure and the dangers of overpopulation, the significance of the movement and exchange of goods is not realized. Modern population theory must take account of the theory of international trade.

In view of the possibilities for an absolute economy in the use of land, and for an increase in the effective supply of land through the movement of agricultural commodities, it is possible to assert that the world has nothing to fear from a prospective failure of the supply of food, providing that technological advance continues, and the abundant land resources of the world are made available to all countries through the movement of agricultural products in international trade.

MINERAL RESOURCES

Mineral resources form the second classification into which the natural resources of the world are divided. Until the Industrial Revolution, mineral supplies had played a relatively unimportant role in the economic and political development of nations. Prior to that time the direction of the growth of national life was guided by advantages of geographical position with respect to existing arteries of trade and commerce, and by industrial activities based on the product of an essentially agricultural economy, including foodstuffs and the manufacture of commodities like textiles, the raw materials for which are produced by a community of farmers.

*EXPLOITATION OF MINERAL
RESOURCES*

The Industrial Revolution introduced new processes that in turn gave rise to a demand for the utilization of raw materials whose value up to that time had scarcely been realized. New manufacturing activities sprang into existence, dependent to a great extent on domestic supplies of mineral resources. The era of industrial development that began with the opening of the nineteenth century created a further demand for raw materials in even greater volume and variety. The required resources were, however, unequally distributed over the world with respect to those nations whose large and enterprising populations were best prepared to make effective use of the new industrial technique. This urgent demand introduced a stage of industrial history marked by a diligent search for new sources of supply.

For these reasons foreign exploitation became a more and more conspicuous element in the situation with respect to mineral resources. In spite of the objectionable connotations of the word, exploitation is necessary to make supplies of essential minerals available to the world. In economic terms the activities connected with exploitation represent the efforts of national economies to adapt themselves to a new proportionality of the factors of production made necessary by dynamic changes in technique. When potential resources exist in countries lacking the capital or labor and skill to make the most effective use of them, material progress

would have been retarded, if not prevented altogether, by the failure to make such resources available. The drive for raw materials enabled the countries where industrial development was proceeding at a rapid rate to draw upon rich sources of supply in economically backward regions.

One aspect of this development was the "peaceful penetration" of underdeveloped countries with small populations and scanty supplies of capital, which were, and continue to be, independent national units. On the other hand, the search for raw materials, and the closely allied demand for foreign markets, led to a demand for colonies in pursuit of which the selfish and ruthless practices of imperialistic expansion were disguised by specious phrases or defended by appeal to the law of economic necessity.

MINERAL RESOURCES AND NATIONAL DEVELOPMENT

When coal and iron became the foundation of the modern state, these minerals worked revolutionary changes in the distribution of national power in the civilized world. The nature of these changes becomes clear when modern states are grouped in different categories determined by the character of their economic life. By reason of their types of production, they fall into three groups, the agrarian, the industrial, and the balanced.³

Agrarian nations are able to feed themselves and,

³ Simonds, F. H., and Emeny, B., *The Great Powers in World Politics* (1935), p. 63

in addition, to produce an exportable surplus of food-stuffs and perhaps of other raw materials. They may possess quantities of various raw materials and minerals which they cannot themselves convert into finished goods because of a lack of coal or iron, or for a variety of other reasons.

The industrial countries of the second group lack sufficient agricultural land to maintain their large populations, and likewise must import a number of raw materials in order to maintain a high level of industrial output. The advantages of training and skill, and accessibility to sources of supply and to market outlets, in the industrial countries, more than compensate for these deficiencies.

The third group (the balanced economies) occupy a fortunate position in which they can feed their populations and, at the same time, supply the needs of their industries from domestic supplies of raw materials. As will be later pointed out, this does not mean that the balanced countries are, by any means, free from the need for international trade.

The agrarian group includes the states in South America and continental Asia, as well as certain small European states. To the industrial group belong Great Britain, Germany, Italy, Japan, and France; and to the balanced group, the United States, Soviet Russia, and the British Empire as a whole.

The significant fact, in this connection, is that no agrarian state ranks as a Great Power. The reason is not difficult to find; national power rests on strength in war on land and sea and in the air, and military strength is

determined, not so much by man power, as by mechanical equipment for war. Industrial nations alone have the strength to triumph in a war of machinery.⁴

DISTRIBUTION OF WORLD MINERAL RESOURCES

The course of the discussion given in the previous section leads to the conclusion that the possession of mineral resources is of overwhelming importance to modern nations in securing for them a position of power and influence in world affairs. The question of the distribution of mineral wealth among the principal nations remains to be considered.

In this connection the reader should consult the compilation of data on the world distribution of mineral wealth presented on the opposite page.⁵ The figures opposite each country show the percentage produced in that country during 1929 of total world output of the several minerals in the same year. The figures in the last column combine these percentages according to a scale of weighted values for the different minerals.⁶ The chart is designed to show the world distribution of mineral wealth in 1929. The figures of mineral pro-

⁴ The problem of access to raw materials has an important bearing on national policy. See below, Ch. XI.

⁵ Reproduced by permission from Sampson, Edward, "Mineral Commerce and International Relations", *Journal of the Franklin Institute*, January 1936, pp. 22-29.

⁶ The original tables show also the world distribution of the ferroalloys and miscellaneous metals. The most striking instances of concentration of the ferroalloys are: molybdenum in the United States, nickel in Canada, chromite in Southern Rhodesia, manganese in the U.S.S.R. and India and Ceylon, tungsten in China, and vanadium in Peru. Of the miscellaneous group the notable instances of concentration are: asbestos in Canada, platinum in the U.S.S.R., and diamonds in the Union of South Africa and the Belgian Congo.

WORLD DISTRIBUTION OF MINERALS *

	COAL	PETROLEUM	NATURAL GAS	IRON		COPPER	LEAD	ZINC	TIN	ALUMINUM		GOLD	SILVER	PHOSPHATES	NITRATES	POTASH	TOTAL WEIGHTED SHARE
				ORE	PIG					BAUXITE	METAL						
U. S. and Alaska	40	67	95	37	44	46	34	39		17	37	11	23	31	8	2	34.1
Germany	15			3	13	1	3	7			12		2	5	34	78	7.3
France and possessions	4			25	11		1	2		30	11			47	4	18	8.5
Canada			1		1	6	9	5			14	10	9	2	2		5.2
United Kingdom	19			7	8		1		2		3			2	8		4.9
British Empire	24	2	1	9	10	8	31	19	47	10	17	72	16	7	10		21.3
U. S. S. R.	3	7	1	4	4	2	2	1	1			53	5	1			3.7
U. of So. Africa	1					1	15	10				3	41				3.4
Mexico		3				4	6	3	1			2	3				3.0
India & Ceylon	2	1		1	1		16								30		2.3
Chile				1	1	1	7	3					1			1	1.9
Spain	1		3	3	1	3	12	9	1				1				1.5
Australia	1						1	1	1			2	4				1.1
Peru		1					1	1									1.1
Italy and possessions							1	1			3				2		1.3
Japan and possessions	3			1			2	5		9	3	3	2	1	3		1.3
China	1				2	4		1	1								1.2
So. Rhodesia								1	4			3					1.2

*The total weighted shares are inclusive of proportionate world distribution of ferroalloys and miscellaneous minerals, for which data are given in the original tables.

duction do not include the known but hitherto unexploited mineral wealth of which various nations are possessed in unequal amounts, the utilization of which may have important bearings in the future on national industrial supremacy and national policy.

Minerals Essential to Industrial Power. The attempt to rank the industrial position of nations on the basis of their possession of mineral resources presupposes the application of some sort of mineral standard.⁷ In classifying mineral resources in the order of their importance to industrial development, the fuels and iron ore should obviously head the list, because the machine age is founded on the consumption of power applied to a great variety of mechanical appliances made of iron and steel. Second in importance come copper, lead, and zinc, used extensively in manufacturing and rising in importance with the development of the uses of electricity. This second group should also include phosphates, potash, nitrates, and sulphur, used extensively in the preparation of fertilizers, and in a vast range of manufacturing and refining operations. These two groups include the minerals that are either essential or necessary to the attainment of national power.

But there are other minerals that constitute important additions to the natural-resource base. The most important of these are the ferroalloys used in the making of iron and steel, including nickel, manganese, chromite, fluorspar, vanadium, tungsten, and others. The nations specializing in the primary industries find these

⁷ The classification used here is suggested by C. K. Leith, *World Minerals and World Politics* (1931), Ch. III.

essential in the manufacture of steel with the physical properties demanded by its various uses. These, together with asbestos, mica, mercury, graphite, antimony, and tin, are used in relatively small quantities, but are nevertheless essential to an industrial economy. Many of these substances are found in distant parts of the world, but because of the small quantities involved, they can be transferred to the industrial centers.

The possession of gold and silver plays a subordinate role in determining the industrial ranking of nations. Industrial power cannot be built on gold and silver. In 1928 the value of the world production of pig iron was three and a half times that of gold, and the value of fuels was thirteen times as great.⁸ In general, it can be said that the mineral position of countries is determined by the natural resources included in the first two groups.

Position of Nations with Respect to Mineral Resources. An examination of the chart on page 153 establishes the overwhelming predominance of the United States as a producer of mineral wealth. The resources included in the first and second mineral groups, with the exception of nitrates and potash, are found in this country in greater abundance than in any other parts of the world. The United States is not only the largest owner of minerals, it is also the largest producer and the largest consumer.

Notwithstanding these bountiful provisions of nature, the United States is almost entirely lacking in a supply of several important minerals, notably many of

⁸ Leith, C. K., *op. cit.*, p. 45

those belonging to the ferroalloy group, besides tin, asbestos, nitrates, and potash, and is dependent on foreign imports to supplement a deficiency in its supply of a number of others, such as mercury, tungsten, and fluorspar.

Next to the United States Great Britain has control of the greatest supply of world minerals, but within its own boundaries it has only a small amount. Of those it possesses, only coal, fluorspar, and china clay exist in abundance. Its supply of iron ore must be supplemented by imports. The relative position of the two countries is graphically presented in the last column of the chart, where the total weighted share of world production is shown to be, respectively, 34.1 and 4.9 per cent.

On the other hand, this disparity in mineral wealth is greatly reduced if the mineral resources of the British Empire are considered as a single group. Its control extends to 21.3 per cent of the total world supply.

The striking fact with regard to the five other great powers, Germany, France, Russia, Italy, and Japan, is the relative scarcity, in comparison with the United States and the British Empire, of the supply of mineral resources for the organization of economic life on an industrial basis.

Regional Concentration of Mineral Resources. Ignoring for the moment considerations of political control, certain conclusions can be drawn from the nature of the geological occurrence of mineral resources as between different regions. The largest reserves are concentrated in comparatively few districts. For example, although iron ore is widely scattered over the globe,

three fourths of the world's annual total production in 1931 came from the United States, England, and certain restricted areas in Sweden and Spain. Coal suitable to coke for power uses is most extensively located in the United States, Great Britain, and western Germany. Further instances of mineral concentration will be revealed by a study of the chart.

INTERDEPENDENCE OF NATIONS

This summary review of world resources emphasizes certain important aspects of the world economy. Agricultural and mineral resources are unequally distributed with respect to population. Furthermore, through the provision of nature, or by means of the exercise of political pressure or military power, certain great powers exercise control over the regions of the world in which the greatest reserves of raw materials are concentrated, although no one nation is entirely self-sufficient with respect to its domestic supplies.

The obvious consequence of this conjuncture of circumstances is that nations are mutually interdependent as to agricultural and mineral supplies. Even the most richly endowed nation is necessarily dependent upon the world supply of certain materials. The international economic organization of society arises out of this mutual dependence. The lines of trade traverse the seas and cross land boundaries. Nearly a third of the world's mineral tonnage, of which coal, oil, and iron constitute the greatest proportion, moves across international boundaries.⁹

The world economic problems presented by the

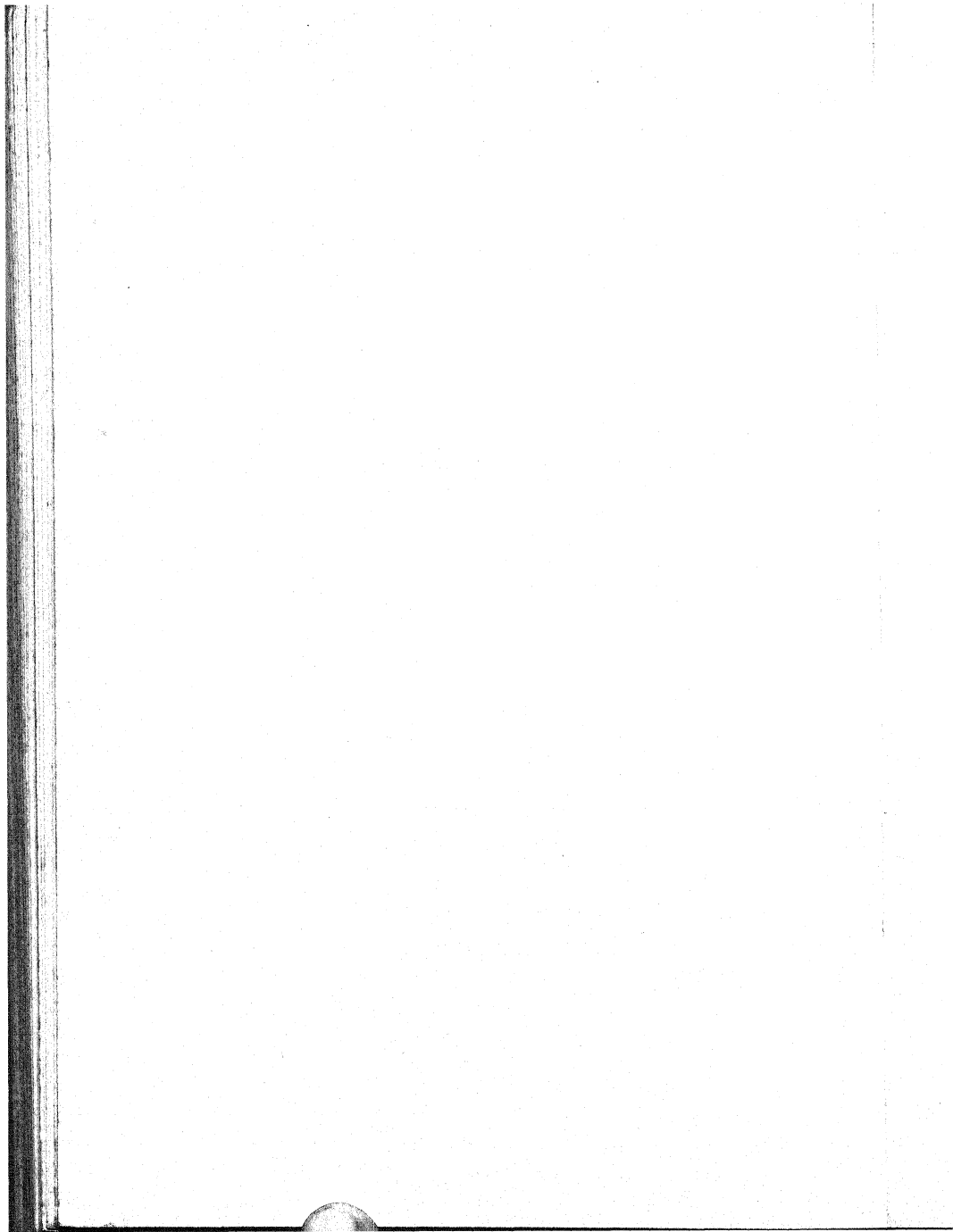
⁹ Leith, C. K., *op. cit.*, p. 13

growth and distribution of population and the location and control of natural resources have been passed in review. Part One of the book, dealing with these subjects, serves to illustrate the thesis presented in the *Introduction*; namely, that economic welfare in the long run depends on a relatively free international movement of factors of production and of commodities. The inequality in the distribution of world resources plays an important part in the formation of national policy. The demands of nations for economic self-sufficiency and relief from population pressure has led on the one hand to the drive for territorial expansion discussed in previous sections, and on the other, to the promotion of commercial policies which, however ill-conceived, are designed to bring some measure of protection and security.

Part Two of this volume will carry forward the argument by an examination of the theory of international trade, and of the effects of conflicting national commercial policies in preventing or retarding the development of international economic organization.

PART TWO

INTERNATIONAL TRADE
AND COMMERCIAL POLICY



CHAPTER VII

The Nature of International Economic Relations

IN the *Introduction* to this book, it was explained how the structure of international economic organization rests on the policies and practices associated with international movements of factors of production and commodities. But it was pointed out that these movements have never occurred on a scale sufficiently large to overcome altogether the inequalities in the distribution of resources with respect to population. The purposes and policies of different nations have modified or obstructed the tendency toward international specialization and division of labor.

One of the most important ways in which the government affects economic life is through its control over the economic relations between its citizens and those of other countries. To what extent and for what purposes should governments attempt to control international economic relations? Before this question can be dis-

cussed the nature of international economic relations, the advantages that result from them, and the economic forces that govern them must be considered.

Broadly conceived, international economic relations consist of the movement across national frontiers of (1) commodities, (2) capital, (3) services, and (4) population. Each of these will be briefly considered, particular attention being paid to the first two.

COMMODITIES

The League of Nations has estimated that international trade amounted to 69 billion dollars in 1929. In 1934 world trade amounted to only 23 billion dollars,¹ a recession of two thirds from the 1929 value. It should be noted, however, that the physical volume of world trade declined only one third during this period. In view of the acute economic nationalism of recent years, and the severe prostration of economic activity during the depression, it is a striking indication of the strength of the economic forces making for international trade that there was not a greater decline than actually occurred.

In the broad flow of commodities among nations three main currents may be observed. The first of these is the exchange of tropical products for commodities from the temperate zone. This was one of the earliest forms of international trade, and still maintains a considerable degree of importance. The bulk of the world's rubber, coffee, cane sugar, and the like is sup-

¹ These figures are calculated in terms of the pre-1934 gold value of the dollar, 23.22 grains of fine gold.

plied by agrarian tropical countries in exchange for manufactures and other products from countries situated in the temperate zone. But many of these tropical products are now produced under a plantation system that was instituted largely through the aid of foreign capital and managerial ability.

A second current of trade is that between the industrial countries, and the agrarian and raw-material producing countries of the temperate zone. Some temperate-zone countries, of which the United States is a notable example, have a widely diversified economy which permits the export of agriculture and mineral raw materials as well as industrial products. Many temperate-zone countries have economies that are predominantly either agricultural or industrial, however, so that there is a fairly clearly defined flow of raw products in one direction, and manufactured goods in the other.

With the enormous increase in population that took place during the nineteenth century, international trade in food products became increasingly important. This followed, in large part, from the specialization of industrial nations in manufacturing to a point where, in view of the population increase taking place, some were no longer self-sufficient in respect to food. England is perhaps the most striking example. Furthermore, as the Industrial Revolution progressed, the industrial nations became more and more dependent on a wide variety of raw materials that they either could not produce themselves for climatic reasons, or found it cheaper to import. Among these products are cotton, silk, wool,

hemp, and hides. In addition, the Industrial Revolution marked an increasing importance for minerals, not only for iron and coal, which are fairly widely distributed, but as technique improved, for minerals such as copper, nickel, tin, sulphur, magnesium, chromium, tungsten, and a host of others. Many of these are found in workable concentrations in only a few countries. There is no country in the world, not even the United States or Russia, that has all of the mineral raw materials needed in modern industry, and the only way of obtaining access to them, aside from war and conquest, is through international trade.

A third clearly marked current in international trade is the exchange of industrial products among the industrialized nations themselves, a type of trade that is of far greater importance than is often realized. Thus, before the 1930-1933 depression Germany was sending three fourths of its industrial exports to European industrial countries, which also provided a market for three fifths of the industrial exports of the United States. This situation arises from the fact that a large share of the output of industrial countries consists of machines, chemicals, electrical appliances, and the like, which are adapted to the use of industrial countries rather than agrarian countries.

Moreover, the large population of many of the industrialized countries, together with their relatively high standards of living and mass purchasing power, provide the chief markets for most of the manufactured goods of the world. It is true that the manufacture of many consumers' goods, such as textiles and shoes, has

tended to become more decentralized during the past few decades. But this is not so true of the producers' goods which constitute a large proportion of the production and exports of many industrialized nations. One of the reasons why the export trade of the United States suffered such a drastic decline during the depression of the early 1930's is that producers' goods normally occupied an important place in our exports. Production of producers' goods, of course, tends to decline more rapidly during depressions than the production of consumers' goods.

In 1934 world trade in foodstuffs constituted twenty-six per cent of total world trade, and trade in raw or

TABLE A
COUNTRIES WITH THE LARGEST FOREIGN TRADE IN 1929
AND 1934 ²

COUNTRY	TOTAL EXPORTS AND IMPORTS (Millions of Dollars) ^a		PERCENTAGE OF TOTAL WORLD TRADE	
	1929	1934	1929	1934
United Kingdom . . .	8,956	3,238	13.05	13.85
United States . . .	9,496	2,228	13.84	9.53
Germany	6,415	2,026	9.35	8.67
France	4,247	1,603	6.19	6.86
Japan	1,965	775	2.88	3.32
Canada	2,524	765	3.68	3.27
Belgium	1,872	755	2.73	3.23
Netherlands	1,906	703	2.78	3.01
Italy	1,941	659	2.83	2.82
India	2,074	618	3.02	2.64
Argentina	1,728	510	2.52	2.18

^a In gold dollars of 23.22 grains of fine gold

² League of Nations, Economic Intelligence Service, *Review of World Trade, 1934* (Geneva, 1935), pp. 26-27

TABLE B
 PERCENTAGE DISTRIBUTION BY CONTINENTAL GROUPS
 OF THE TRADE OF COUNTRIES WITH THE LARGEST
 FOREIGN TRADE 1934³

IMPORTS						
IMPORTS FROM	EUROPE	NORTH ^a AMERICA	LATIN ^b AMERICA	AFRICA	ASIA	OCEANIA
IMPORTS INTO						
United Kingdom	35.1	18.5	13.7	6.4	13.8	12.5
United States . . .	30.0	14.4	23.5	2.0	29.2	0.9
Germany	59.2	9.8	10.9	5.8	11.0	3.3
France	41.6	10.8	9.4	24.6	10.1	3.5
Japan	13.2	36.6	1.1	3.5	36.1	9.5
Canada	29.2	57.3	6.1	1.2	4.0	2.2
Belgium	65.6	9.2	11.3	6.2	5.1	2.6
Netherlands . .	69.4	7.5	11.2	1.6	10.1	0.2
Italy	59.7	13.1	7.9	6.9	8.8	3.6
India	60.9	7.5	0.0	3.8	27.0	0.8
Argentina . . .	61.2	17.0	12.4	0.0	9.4	0.0
EXPORTS						
EXPORTS TO	EUROPE	NORTH ^a AMERICA	LATIN ^b AMERICA	AFRICA	ASIA	OCEANIA
EXPORTS FROM						
United Kingdom	38.7	9.6	9.8	14.2	18.1	9.6
United States . .	44.6	14.4	16.0	3.6	18.7	2.7
Germany	77.8	4.3	6.5	2.6	8.2	0.6
France	55.3	5.2	5.6	28.0	5.4	0.5
Japan	10.5	18.8	4.8	8.4	53.8	3.7
Canada	50.4	34.2	4.8	2.3	4.6	3.7
Belgium	74.5	5.2	6.2	5.8	7.9	0.4
Netherlands . .	82.1	3.8	3.5	3.2	7.0	0.4
Italy	68.8	7.9	7.2	9.4	6.2	0.5
India	50.8	9.4	3.3	6.6	27.6	2.3
Argentina . . .	85.2	6.3	7.5	0.0	1.0	0.0

^a Includes the United States and Alaska, Canada, Newfoundland, Greenland and St.-Pierre et Miquelon.

^b America other than North America

³ League of Nations, Economic Intelligence Service, *Review of World Trade, 1934* (Geneva, 1935), pp. 65-66

partly manufactured materials and in manufactured articles each constituted thirty-seven per cent of the total. The countries with the largest foreign trade in 1929 and 1934, together with the ratio of the trade of each to the world total, are shown in Table A on page 165. Particularly noteworthy is the dominant position in world trade occupied by the United Kingdom, the United States, Germany, and France. The tremendous decline in the foreign trade of the United States during the depression should also be noted. In Table B on page 166 are shown the sources of imports and destination of exports of these countries by continental groups. The most striking fact brought out by Table B is the importance of the trade of European countries with one another.

CAPITAL

Nature of Capital Movements. The *Introduction* of this book explained the part played by capital movements in the adjustment of the more mobile factors of production to the natural-resource factor. Stress was laid on the manner in which capital movements facilitate world distribution of the labor supply through migration. However, capital movements play an equally important part in connection with the movement of goods.

International movements of capital are intimately related to the commodity trade that has just been discussed. This is because loans and investments are, in normal times, represented to only a small degree by transfers of gold. Capital movements simply represent

the transfer of purchasing power from domestic investors to foreigners.

In other words, when English investors lend to a railroad corporation in Brazil they transfer purchasing power to the corporation by assigning to it deposits in British banks in exchange for railroad bonds. Even assuming that both countries are on a gold standard, although this is contrary to fact at the present time, only a small amount of these deposits would probably be converted into gold and shipped to Brazil. Instead, the railroad corporation would draw on its balance in England to purchase rolling stock, rails, the services of engineers, and so on. It might even happen that most of the rails would be purchased in the United States, and that the American exporters would be paid with drafts drawn on bank deposits in England. Again, the railroad corporation might wish to convert part of its deposits in England into Brazilian currency in order to pay wages in that country. This could be accomplished by drawing drafts on the sterling deposits in England and selling these drafts in the exchange market in Brazil. In this case, as well as in the case of the American exporters of steel rails who were paid in sterling drafts, the drafts could be sold to those who had remittances to make to England to pay for English exports, or to pay interest or dividends on British foreign investments.

It can be said, also, that the transfer of purchasing power from the British investors to the railroad corporation in Brazil may result in compensating adjustments

in commodity movements. For example, British commodity exports may increase, or British imports may be reduced, so that the transfer of the purchasing power takes place in the form of commodity movements. Gold exports to Brazil would occur only if the adjustments in commodity movements were insufficient to balance the transfer of purchasing power caused by the investment. It must be clearly understood that international capital movements are closely bound up with international commodity movements, and that the former cannot exist in any significant degree without the latter.

Long-Term Capital Movements. Long-term capital movements are usually classified as portfolio investments and direct investments. Portfolio investments are illustrated by the foregoing example in which British investors bought the bonds of the Brazilian railroad. In other words, portfolio investments are merely loans. Such loans are usually made by the citizens of one country to the citizens or government of another country.⁴

Direct investments involve the ownership of enterprises situated in foreign countries. They arise when citizens or corporations of one country obtain ownership and control of foreign enterprises such as factories, mines, railroads, and the like. A typical example is the establishment of an American branch factory in Canada. American foreign investments, exclusive of

⁴ There have been some examples of loans by governments to other governments. The inter-allied debts are the most striking example of this kind.

intergovernmental debt, were estimated as follows at the end of 1936:⁵

AMERICAN PRIVATE LONG-TERM INVESTMENTS IN FOREIGN COUNTRIES, ESTIMATED AS OF THE END OF 1936

(In Millions of Dollars)

AREA	DIRECT (BOOK VALUES)	PORTFOLIO (PAR VALUES)	TOTAL
Canada and Newfoundland .	2,085	1,647	3,732
West Indies	975	128	1,103
Central America and Mexico	855	38	893
South America	1,580	1,354	2,934
Europe	1,400	1,949	3,349
Asia	435	374	809
Oceania	160	249	409
Africa	130	2	132
Total	7,620	5,741	13,361
Add bank capital	125	—	125
Deduct estimated net repurchases by foreigners .	—	1,000	1,000
Net Total	7,745	4,741	12,486

It may be noted that the Department of Commerce has estimated the private long-term investments of foreigners in the United States at the end of 1936 as 6.1 billions of dollars.⁶

The chief capital-exporting countries since the World War have been the United States, the United Kingdom, the Netherlands, Switzerland, and France, of which the first two are by far the most important. In general the capital-exporting nations are the highly industrialized

⁵ United States Department of Commerce, *The Balance of International Payments of the United States in 1936* (Washington, 1937), p. 33

⁶ United States Department of Commerce, *Foreign Investments in the United States* (1937), p. 14

countries with a very uneven distribution of income. The concentration of a relatively large proportion of the national income in the hands of a numerically small capitalist class results in large savings, and the highly industrialized nature of the most important capital-exporting nations permits the ready conversion of savings into machinery and other industrial equipment for export. Although political considerations are sometimes of importance in determining the flow of capital, normally the export of private capital is primarily motivated by the possibilities of obtaining a higher rate of return abroad than can be obtained at home.

Short-Term Capital Movements. In addition to long-term capital movements, there are large movements of short-term capital among the various countries of the world. World trade is not, to a significant degree, carried on by sales for cash, but rather through a mechanism involving the use of time drafts and bills of exchange.⁷ Before the World War, the greater part of these drafts were discounted before maturity in the London money market; that is, exporters from all over the world in possession of drafts could sell or discount these drafts in the London market, and thus obtain immediate possession of funds before the drafts matured. In other words, the British financial system was furnishing the short-term credits that financed the greater part of world trade. Since the adoption of the federal reserve system this country has also engaged in this type of business.

⁷ See Luthringer, G. F., Chandler, L. V., and Cline, D. C., *Money, Credit, and Finance*.

Since the World War, however, there have been enormous movements of short-term capital for speculative purposes and for reasons of political uncertainty. An example of the first was the influx of foreign short-term capital into this country to take advantage of the high rate on call loans or brokers' loans in 1928 and 1929. Examples of the second kind have been the enormous inflows and outflows of short-term capital between London, Paris, and New York because of attempts of the owners of these funds to place them in a country where the chance of loss from currency depreciation appeared to be least.

As many critics have pointed out, the great increase in the volume of international short-term capital transactions relative to the volume of commodity trade was one of the factors leading to the breakdown of the gold standard. This is because a sudden attempt to transfer short-term capital in large amounts results in a heavy gold drain. In normal times, withdrawals of short-term capital can be effected by adjusting the ratio of commodity exports to imports, but when withdrawals are sudden and large, the burden is thrust upon the gold reserves of the countries losing capital. The situation was particularly dangerous toward the end of the decade of the 1920's, because London and New York were borrowing heavily on short term from France, Switzerland, and Holland, and were lending on long term to Germany, the countries in the Danubian basin, and South America. There is no question but that one of the primary causes of the world economic collapse was the tendency to carry on

an inflated volume of international finance in a world that interfered to an increasing degree with the necessary movement of commodities.

SERVICES AND POPULATION MOVEMENTS

The third type of international economic relations involves the furnishing of services by citizens of one country to those of another. These transactions include such things as transportation services, brokerage services, insurance services, and services furnished to foreign tourists. Items such as these are important in some instances, such as the shipping services furnished by the United Kingdom and the expenditures of American tourists abroad. Viewed on a world basis, however, they are much below commodity movements in value.

The last class of international economic relationships is the movement of population across national frontiers. By this is meant those population movements commonly called "immigration" or "emigration", rather than the temporary traveling of tourists.⁸ The immigration into this country is an outstanding example.⁹ In the remaining chapters of this volume, attention will be largely confined to the study of international trade in goods and services, with occasional references to international finance.

⁸ For a fuller discussion of population movements, see above, pp. 9-13.

⁹ A brief account of the history of immigration to the United States is given in Ch. IV, pp. 127-131.

CHAPTER VIII

Theory of International Trade

THE theory of international trade is essentially the explanation in general terms of the economic forces that give rise to international trade, and that determine what kind of goods and services a nation will export and import. But first it is necessary to indicate the points of similarity and of difference between international trade and domestic trade.

SIMILARITY OF FOREIGN AND DOMESTIC TRADE

International trade and domestic trade possess more characteristics of similarity than of difference. This results largely from the fact that both international trade and domestic trade are manifestations of the same fundamental thing, the exchange of goods and services. Both types of trade are carried on, except in Russia, by individuals in pursuit of monetary profits. In domestic

trade individuals, to the extent that their choices are rational and informed, will buy where goods can be obtained most cheaply, whether this be in Maine or in California. Similarly, goods are sold where the greatest profits may be realized, whether this be Minnesota or Texas. International trade arises when individuals find that goods can be purchased more cheaply in foreign countries than in the domestic market, or can be sold in foreign markets to better advantage than in the domestic market.

From the point of view of the individual buyer or seller, therefore, international trade arises because of the monetary profits that it offers. It is customary to say that the "United States" sells goods to "France" or buys goods from "Japan." This misconception is to no small degree the product of the arrant nationalism that is so prevalent today, and that is responsible for much erroneous thinking as well as international ill will. In reality, foreign trade, like domestic trade, is, for the most part, carried on by individuals with individuals.

The immediate motivation of trade is monetary profit, but the "monetary veil" over trade must be pierced, in order to understand the economic significance of trade, domestic as well as international. Trade must be viewed fundamentally as an exchange of goods and services for goods and services. Money is essentially a highly convenient device or tool for facilitating the exchange of goods and services. The ultimate end of all economic activity is the availability of useful goods and services for consumption. From the general or social point of view production and trade are carried on not

for themselves, but only as a means to the end of real income.¹ With reference to foreign trade this means that exports are the means and imports are the end. This, of course, runs counter to popular ideas that regard exports as inherently desirable, and imports as a necessary evil at best. The basis of this misconception is an inability to pierce the monetary veil over trade. Thus the individual merchant makes a profit by having monetary income exceed monetary outgo, and from this obvious fact many people leap to the conclusion that the profit from international trade consists of the nation as a whole selling more commodities abroad than it buys, which it is assumed will result in a "favorable balance of trade", or a net import of gold.²

This idea implies a fundamental misunderstanding of international trade. Goods are not sold abroad for gold; rather, payment is effected by the use of bills of exchange. An elaborate foreign-exchange mechanism enables payment to be made by the cancellation of indebtedness, the exporters of each country being paid in their own currency by those of their countrymen who owe payments abroad for goods that have been imported. Under gold-standard conditions gold flows are self-limiting. If allowed to have their appropriate effect on prices, gold movements only occur in quantities sufficient to effect an adjustment of prices that will maintain an equivalence in money value between total international debits and credits. This total includes

¹ The desirable goods and services received by individuals for consumption are termed "real income."

² For a detailed discussion of the balance of payments see Luthringer, Chandler, and Cline, *Money, Credit, and Finance*.

services and capital transactions as well as commodity imports and exports.

An excess of commodity exports over imports is therefore no assurance that a nation will not lose gold instead of gain it, since a credit balance on commodity account may be more than counterbalanced by a debit balance on capital account. Moreover, a continuing influx of gold, by raising prices at home relative to those abroad, will normally halt itself by reducing exports relative to imports. There are thus, under gold-standard conditions, very real limits to the amount of gold that one nation may gain from others. But even if it were true that a nation could so arrange matters that it imported nothing from abroad but gold, it would be a most unfortunate state of affairs for its citizens. Indeed, a nation that imported nothing but gold would find itself in much the same position as King Midas whose touch brought him gold but no real income.

Looking beyond the monetary veil it is apparent that, from the point of view of domestic production and trade, the economic activities of individuals consist of producing and exchanging goods and services. Each individual specializes in some economic activity and exchanges the particular goods or services, which he produces, for a varied assortment of other goods and services, which constitute his real income. Thus a doctor exchanges his medical services for food, clothing, housing, books, and the like. The fact that money intervenes as a medium of payments does not alter the fundamental nature of this process. The significant point is that the more goods and services in general that

the doctor receives for his medical services, the richer he is.

Similarly, in international trade, the more imports that can be obtained for a given volume of exports, the better off a nation will be. The real income of the nation depends upon production *plus* imports and *minus* exports. To the extent that imports consist of useful commodities and services rather than huge excess reserves of gold, which are straightway lodged in a vault and thus buried again in the earth, the greater will be the real income of the nation. This is as true for the nation as for the individual, or for the community or state within the nation. The people of New Jersey, for instance, do not obtain high real income by selling goods and services to the people of other states, and by buying nothing in return. They obtain high real incomes by "importing" from people in other states just as many goods and services as they possibly can in return for the goods and services that they "export."

DIFFERENCES BETWEEN FOREIGN AND DOMESTIC TRADE

Though international trade and domestic trade are essentially similar both in motivation and economic effect, there are some points of difference. To begin with, domestic trade is carried on with the same monetary unit by buyers and sellers. In international trade, however, different monetary units are employed. Although this is not a distinction of fundamental theoretical importance, fluctuating rates of exchange, particularly under non-gold-standard conditions, introduce

an immediate or proximate factor affecting international trade. Within a country such as the United States, this factor of fluctuating exchange rates is largely absent from domestic trade. In other words, the monetary mechanism of trade is different when trade is international and when it is domestic.

Of perhaps greater importance is the fact that by and large the division of the world into nation-states tends to group the population and resources of the world into more or less clearly defined economic compartments, between which the mobility of the factors of production and of goods is usually much less than it is within the nation. In part, this immobility is due to the fact that nations frequently have natural barriers, in the geographic sense, marking political frontiers. In addition, there are barriers arising from differences in laws, language, and culture. In the third place, there are often many political interferences with the movement of labor, capital, or goods between countries, such as immigration restrictions, tariffs, and embargoes.

As explained in an earlier connection, goods have a greater degree of international mobility than the factors of production. Certain factors of production such as mines, forests, and particular qualities of soil, are immobile for natural reasons, although the products resulting from the use of these factors may be freely transported. Another important factor of production, labor, possesses a fairly high degree of mobility, but this mobility is usually much less than that of goods. This is particularly true of international mobility. Although there is a strong tendency for workers to migrate from

areas of low real wages to areas of high real wages within a given country, this tendency is usually weaker between countries with differing wage levels. This is partly because of human factors such as race differences, home ties, and the general desire to remain in a familiar linguistic and cultural environment, and partly because of economic forces such as the great expense involved in moving to a distant region and beginning life anew. Finally, political interference with the migration of labor has, in many cases, been an extremely important factor.

Although capital shows a high degree of international mobility, the mobility of capital is probably less between countries than within a single country. This is explained, on the one hand, by the preference of many people for home investment rather than foreign investment, because of an unfamiliarity with the investment opportunities in foreign countries. On the other hand, its explanation lies in part in the greater degree of risk that is often involved, because of the uncertainties of foreign political action. It is undoubtedly true, however, that capital possesses a higher degree of international mobility than labor and natural resources.

BASES OF INTERNATIONAL TRADE

As pointed out in the *Introduction*, international trade, from the economic point of view, arises from the uneven distribution of population and resources among the nations of the world, together with the fact that commodities, for the most part, possess a greater

degree of mobility than population and natural resources. Moreover, nations differ in education, culture, and skills. All of these widely varying conditions tend to make for differences in the relative costs of producing goods within the various nations of the world. These differences in relative costs of production for various commodities within a given country, as compared to differences in relative costs of production for the same commodities in other countries, offer the fundamental explanation of international trade.

Adjustments of Costs within a Country. Within a given country, the ability to shift factors of production among various industries, until the return realized from a given factor is approximately the same in whatever industry it is employed, means that goods will ordinarily exchange in the ratio of their money costs of production. That is, if a given grade of labor can earn a higher return in industry *H* than in industry *L*, there will be a tendency for labor to be moved from *L* to *H*, until the return is the same in each industry. Similarly, capital tends to seek the industry where the largest return in profits can be realized, until the rate of profit, taking into account differences in risk, is about the same in all industries. This equilibrium may never be exactly attained, but the pressure of economic forces is continually in that direction. One of the conditions of this equilibrium is that goods exchange in the ratio of their money costs, and these costs depend upon the prices of the factors that are embodied in the goods.³

³ Cf. McIsaac and Smith, *Introduction to Economic Analysis*.

Adjustment of Prices and Costs of Production as between Different Countries. Since the factors of production vary in kind and relative abundance as between different countries, relative costs, and hence relative prices of goods, will tend to vary from country to country. In the United States, for example, commodities that are produced by the use of large amounts of natural resources and capital in proportion to the amount of labor involved (such as electric refrigerators or machines) will be relatively cheap, because they embody a large amount of our most abundant factor of production. On the other hand, commodities that require a large amount of labor in proportion to the resources and capital involved (such as fine hand-woven fabrics) will be relatively expensive, because they embody a high proportion of scarce factors of production relative to cheap factors of production. In such a country as Japan the situation is quite the reverse. Japan possesses scant resources relative to population, and a relatively limited amount of capital. In Japan, then, those goods will be relatively cheap that embody a large amount of labor in proportion to other factors of production (such as raw silk); and those goods that embody a small amount of labor and a large amount of other factors (such as machines) will be relatively dear.

As a consequence, if no international trade takes place, goods will exchange at decidedly different ratios in various countries. Thus, in the absence of international trade, refrigerators and machines would be cheaper in the United States than fine hand-woven fabrics. On the other hand, in Japan, raw silk would be cheaper than machines.

The tendency of international trade is to bring the ratios of exchange of various goods into a common pattern throughout the world. This follows from the fact that each nation, to the extent that trade is unimpeded by governmental interference and controls, will specialize in the production of goods that, because of the particular kind and proportion of factors of production existing, it can produce at a comparative advantage. Conversely, each nation will import the goods that it can produce only at a disadvantage. The result is that, to the extent that trade is free, transportable goods tend to exchange at about the same ratio in all countries and, under a common monetary standard such as the gold standard before the war, tend to sell at about the same price in all countries, due allowance being made for the costs of transportation. These adjustments in prices and money costs of production between various countries will be illustrated in the examples given in the next section.

International trade thus compensates for the limited mobility of factors of production. Although it may not be possible for these factors to move directly to their best markets, the commodities that embody them may do so.

AN ILLUSTRATION OF COMPARATIVE ADVANTAGE

This may be illustrated as follows: Suppose that conditions prevailing in a hypothetical country, Cort, as to the relative proportion and costs of factors of production, are such that a given monetary outlay for labor, resources, and capital will pay for the production of one

bushel of wheat or two yards of cloth. Or, in other words, it can be said that the money costs of a bushel of wheat are twice those of a yard of cloth. This being the case, the ratio of exchange of wheat and cloth in Cort would tend to be "one bushel of wheat equals two yards of cloth." Assume further, for the time being, that Cort has no foreign trade, and that this is also true of a second hypothetical country, Weston. In Weston, however, suppose that, because of a different situation as to the relative proportion of factors of production and costs, a given monetary outlay will pay for the production of one bushel of wheat or one yard of cloth. In Weston, then, the money costs of production of a bushel of wheat and a yard of cloth will be the same, and the ratio of exchange of the two commodities will be "one yard of cloth equals one bushel of wheat."

These assumptions may be summarized in tabular form as follows:

PRODUCTIVITY OF CLOTH AND WHEAT IN TWO
HYPOTHETICAL COUNTRIES

CORT	WESTON
In Cort, a given outlay for factors of production will permit production of either: 1 bushel of wheat or 2 yards of cloth	In Weston, a given outlay for factors of production will permit production of either: 1 bushel of wheat or 1 yard of cloth
Price ratio in Cort: 1 bushel of wheat = 2 yards of cloth	Price ratio in Weston: 1 bushel of wheat = 1 yard of cloth

Cort
1 bush. wheat
2 yds. cloth

Weston
1 bush. wheat
1 yd. cloth

Cort has a relative advantage in both, Weston compares

Looking at this situation from the point of view of cost per unit of output it can be said that in Cort the efficiency of the cloth industry is twice that of the wheat industry, or as 2 : 1. In Weston, on the other hand, the two industries are of equal efficiency, or as 1 : 1. This situation is commonly described by saying that Cort has a *comparative advantage* in the production of cloth. It can likewise be said that Weston has a comparative advantage in the production of wheat. This follows from the fact that, while in Weston the efficiency of the wheat industry as compared to the cloth industry is as 1 : 1, in Cort the efficiency of the wheat industry as compared to the cloth industry is as 1 : 2.

Thus, under the given conditions, the statement that Cort has a comparative advantage in cloth also implies that Weston has a comparative advantage in wheat. If trade were opened up between the two countries, Cort would export cloth, in which it has a comparative advantage, and would import wheat, while Weston would export wheat, in which it has a comparative advantage, and import cloth.

This follows from the fact that in Cort, before trade was begun, one bushel of wheat exchanged for two yards of cloth, while in Weston one bushel of wheat exchanged for one yard of cloth. Thus, it would be profitable for traders to purchase wheat in Weston, export the wheat to Cort, and there exchange it for two yards of cloth. This cloth could, in turn, be brought back to Weston and sold there for two bushels of wheat.

In Weston traders would net a profit of one bushel of

advantage in wheat, Cort in cloth.

wheat on the transaction, disregarding the costs of transportation involved, which it is assumed would be relatively minor. Conversely, of course, it would be profitable for a trader in Cort to export two yards of cloth to Weston, where it could be traded for two bushels of wheat, and the wheat, in turn, could be brought to Cort and sold for four yards of cloth. Disregarding transportation costs, this would net the traders a profit of two yards of cloth.

Trade of this kind would soon upset the ratios of exchange that existed before foreign trade was begun. Thus in Cort the supply of wheat would be increased relative to the supply of cloth, since cloth was being exported and wheat imported. As a result wheat would tend to fall in price relative to cloth. Conversely in Weston cloth would fall relative to wheat.

Eventually, an equilibrium would be established in which the two products exchanged at about the same ratio in the two countries, making allowance for differences due to cost of transportation. This ratio would be somewhere between Cort's former ratio of "one bushel of wheat equals two yards of cloth" and Weston's ratio of "one bushel of wheat equals one yard of cloth." The exact point of equilibrium would depend upon the relative intensity of demand for wheat and cloth in Cort and Weston. Assume for purposes of illustration that the ratio of exchange which eventually emerges is "one bushel of wheat equals 1.5 yards of cloth." The situation could now be summarized as shown in the table on page 187.

*If taxes are high, import prevent exporting unless
they affect your comparative advantage. Because
high taxes, will throw out, + prices will stay
down, usually, to keep comparative advantage the
same.*

RELATIVE PRICES OF CLOTH AND WHEAT IN
TWO HYPOTHETICAL COUNTRIES

CORT	WESTON
<i>Ratio of Exchange before Trade</i>	
1 bushel of wheat = 2 yards of cloth	1 bushel of wheat = 1 yard of cloth
<i>Ratio of Exchange with Foreign Trade</i>	
1 bushel of wheat = 1.5 yards of cloth (or 1 yard of cloth = $\frac{2}{3}$ bushel of wheat)	1 bushel of wheat = 1.5 yards of cloth (or 1 yard of cloth = $\frac{2}{3}$ bushel of wheat)

In Cort, at the new ratio of exchange, which is common to both countries, wheat would have fallen in price relative to cloth from "one bushel of wheat equals two yards of cloth" to "one bushel of wheat equals 1.5 yards of cloth." Or, to put it differently, in Cort, with foreign trade, it is possible to obtain one and one-third bushels of wheat in exchange for two yards of cloth, whereas without trade only one bushel of wheat could have been obtained in exchange for two yards of cloth. Conversely, in Weston, cloth would have become cheaper in terms of wheat; that is, cloth would have fallen from "one bushel of wheat equals one yard of cloth" to "one bushel of wheat equals 1.5 yards of cloth." Or, in other words, without trade it was possible to obtain only one yard of cloth in exchange for a bushel of wheat. On the other hand, with trade it became possible to procure 1.5 yards of cloth in exchange for a bushel of wheat.

ADVANTAGES OF INTERNATIONAL TRADE

Under these conditions, each country will realize a substantial gain from trade by specializing in the production of the commodity in which it has a comparative advantage and importing the other. Before trade was begun, an equivalent outlay for factors of production in Cort would have procured one bushel of wheat or two yards of cloth. By specializing in the production of cloth, and exporting cloth, Cort is enabled to procure one and one-third bushels of wheat for an outlay for factors of production that domestically could produce only one bushel of wheat. Similarly in Weston, where an equivalent outlay for the factors of production without trade procured only one yard of cloth or one bushel of wheat, by specializing in and exporting wheat it is possible to procure 1.5 yards of cloth for an outlay for factors of production that domestically could produce only one yard of cloth. It will, therefore, increase the amount of goods available for consumption in each country if each specializes by diverting labor and capital to the production of the commodity in which it has a comparative advantage, and exchanges part of the product thus produced with the other country in order to import the commodity in which it does not have a comparative advantage.

As will become apparent in the next chapter, when the mechanism of adjustment is discussed, wheat imported from Weston will compete with domestic wheat in Cort, and will cause this adjustment to take place in Cort by driving labor and capital into the cloth in-

dustry. Similarly, competition of imported cloth with domestic cloth in Weston will force labor and capital into the wheat industry. Equilibrium will be reached at the new price when the exports from Cort and Weston are sufficient to pay for the imports of each.⁴

At this point it is well to recall an earlier statement; namely, that in each case the exports are not the end but only the means to the end of imports. The greater amount of goods resulting from specialization along lines of comparative advantage raises real income in both countries by increasing the amount of goods available for consumption.

The gain from international trade is analogous to the gain from domestic trade. This gain results in part from the fact that trade, either domestic or foreign, causes a net increase in the amount of goods available for consumption. Thus, in domestic trade, the exchange of goods and services permits specialization by individuals (or occupational specialization), specialization by enterprises, and regional or geographical specialization. Occupational specialization tends to increase productive efficiency both by allowing people to use their natural aptitudes to best advantage, and by actually furthering the acquirement of special skills as people devote productive efforts to specialized tasks. Specialization of enterprises increases productive efficiency by permitting large-scale production in specialized plants. Geographical specialization within the country enables

⁴ To simplify the analysis it is assumed in this illustration that Cort and Weston have no foreign trade except with one another, and that there are no service or capital items in their balance of payments.

each region to utilize its resources to best advantage. Foreign trade simply enlarges the area in which specialization is possible, and enables it to be carried on to a greater degree than would be the case if no international trade existed.

One advantage of international trade is that it permits those nations without certain minerals such as nickel, petroleum, copper, tin, or certain agricultural products such as coffee, tea, or cocoa, to enjoy products that they would otherwise be forced to dispense with altogether. But this is only one aspect of the gain from foreign trade. Most countries find it desirable to import large quantities of commodities that *could* be domestically produced if people were forced to pay the higher prices that would result.

If imports were confined to only those articles that a nation could, under no conceivable circumstances, produce for itself, foreign trade would shrink to a mere fraction of its present volume. This would be because trade would be limited to a few raw materials of the type mentioned, and the many nations having no significant amounts of raw materials of this nature to offer in trade would be deprived of imports altogether. It is for this reason that the theory of international trade is presented as a matter of comparative costs. Cuba, in spite of its rich soil, imports much of its food because of a marked comparative advantage in the production of sugar, and not because it is physically incapable of producing much of the food that is imported from the United States.

Finally, another aspect of the advantages of foreign

trade must be considered. Trade, domestic as well as foreign, increases the sum total of human satisfactions. Thus, if X has a hat that he values less than a pair of shoes owned by Y, and if Y prefers the hat to the shoes, an exchange might take place that would increase the sum total of human satisfactions without any change in the quantity of goods available. Now X might originally have paid five dollars for the shoes, in the open market, and Y five dollars for the hat, but each would go his way feeling more content. Each might think that the other was the poorer by the trade, but actually each felt that he gained, or otherwise the trade would not have taken place. Part of the gain from trade thus consists of the greater satisfaction afforded by so distributing goods that people obtain from them a greater satisfaction than they would gain from the goods that they must surrender in exchange.

It is, of course, impossible to measure the satisfaction afforded by a quantity of imports, and to compare this with the satisfaction that would have been afforded by these exports if they had been domestically consumed. But, assuming a given distribution of money incomes, it is reasonable to assume that the trade would not have taken place unless there were a net gain in satisfaction; the money would have been spent for domestic products instead. The fact that the money value of the imports and exports may be identical does not preclude a substantial gain of this kind. If the United States placed an embargo on imports of coffee and instructed its citizens to drink an artificial substitute instead, the resulting popular outcry would perhaps be

ample evidence of the existence of the greater amount of satisfaction afforded by coffee imports as compared to the satisfaction afforded by the consumption of goods that were formerly exported to obtain the coffee.⁵

Although both parties must gain from trade, if it is to take place at all, they need not gain equally. The extent of the gain that accrues from trade is limited by the ratios at which commodities would exchange in various countries in the absence of trade. In the illustration discussed above it was assumed that, without trade, one bushel of wheat would exchange for two yards of cloth in Cort, while one bushel of wheat would exchange for one yard of cloth in Weston. Now when these countries trade, the ratio of interchange that finally emerges must be a ratio within these two limits.

If the ratio of interchange were "one bushel of wheat equals one yard of cloth", there would be no advantage for Weston in foreign trade; conversely, if the ratio were "one bushel of wheat equals two yards of cloth", there would be no advantage for Cort in foreign trade. Whether the ratio of interchange that finally emerges favors Cort, which exports cloth, such as a ratio of "one bushel of wheat equals 1.2 yards of cloth", or favors Weston, which exports wheat, by such a ratio as "one bushel of wheat equals 1.8 yards of cloth", is largely a matter of the relative intensities of demand for wheat and cloth. If the demand in Cort for wheat were less strong than the demand in Weston for cloth, the ratio

⁵ In such a case, factors of production might be diverted to the production of other goods than those that were formerly exported in exchange for coffee; but, though this might mitigate the loss in satisfactions, it would not eliminate it entirely.

would probably be something like "one bushel of wheat equals 1.2 yards of cloth"; that is, cloth would be dear in terms of wheat. If, however, the demand in Cort for wheat were strong as compared to the demand in Weston for cloth the ratio of interchange would be something like "one bushel of wheat equals 1.8 yards of cloth"; that is, cloth would be cheap in terms of wheat.

Under the former assumption Cort would gain more from trade than Weston, and under the latter assumption Weston would probably gain more from trade than Cort. This would follow from the fact that in the first case Cort would be forced to export a smaller quantity of cloth to obtain a given amount of wheat, and would therefore have a larger quantity of the factors of production to devote to other goods. Under the latter assumption, Weston would gain in like manner. In either case, however, both parties would make some gain from the trade or otherwise it would not take place.

CHAPTER IX

Monetary Adjustments in International Trade

THUS far, international trade has been discussed largely in terms of real goods and services, and as though it were carried on by direct barter. As previously mentioned, however, international trade is, for the most part, carried on by individuals seeking monetary profits. It remains, therefore, to show how the monetary mechanism leads to specialization along lines of comparative advantage. This will be done by two illustrations of international trade in monetary terms, instead of the real terms used in the previous example. The first of these illustrations will postulate gold-standard conditions and the second, inconvertible paper money standards.

ADJUSTMENT UNDER GOLD-STANDARD CONDITIONS

Assume that the countries used in the previous illustration are both on a gold standard. To simplify the

argument, prices in both countries will be expressed in gold dollars, it being assumed that these prices are converted from prices expressed in the currency units of Cort and Weston into gold dollars at par of exchange. It will be recalled that in the original illustration it was assumed that a given monetary outlay for factors of production in Cort would produce either one bushel of wheat or two yards of cloth. Suppose that this outlay in gold-dollar equivalent amounted to \$1.00. Then, before trade was opened up between the two countries, the cost of production of one bushel of wheat in Cort would be \$1.00, and it may be assumed that the selling price would be \$1.00.¹

Similarly, the cost of production and price of cloth in Cort would be fifty cents, since an outlay of \$1.00 would produce two yards of cloth. Suppose that in Weston, however, the outlay of fifty cents in gold would produce one yard of cloth or one bushel of wheat. This would mean that in Weston the money cost of production and price of each commodity would be fifty cents. The situation in monetary terms, before trade was opened up, would then be as shown in the table on page 196.

Now if trade were opened up between the two countries, it is apparent that, at first, although there would be a considerable monetary profit in exporting wheat from Weston to Cort, there would be no profit immediately in exporting cloth from Cort to Weston.² As a result of

¹ It is assumed that costs include the return necessary to attract capital into the industry. Cf. McIsaac and Smith, *Introduction to Economic Analysis*.

² This would be because of the transportation costs involved, which are omitted to simplify the illustration.

MONEY COSTS OF PRODUCTION AND PRICES OF WHEAT AND CLOTH IN TWO HYPOTHETICAL COUNTRIES ON THE GOLD STANDARD

BEFORE INTERNATIONAL TRADE TAKES PLACE

CORT	WESTON
Cost of production of one bushel of wheat \$1.00	Cost of production of one bushel of wheat \$0.50
Price of one bushel of wheat \$1.00	Price of one bushel of wheat \$0.50
Cost of production of one yard of cloth \$0.50	Cost of production of one yard of cloth \$0.50
Price of one yard of cloth . \$0.50	Price of one yard of cloth . \$0.50

wheat moving from Weston to Cort without any counter flow of cloth from Cort to Weston, gold would flow from Cort to Weston.³ Under the assumed gold-standard conditions, the outflow of gold from Cort, and its influx into Weston, would decrease the supply of money in Cort and increase its supply in Weston. This would, of course, tend to lower prices in Cort and raise them in Weston.

These price adjustments would occur not only in the prices of finished goods, but also in the prices of the factors of production and hence in costs of production. Equilibrium would be reached when prices and costs had been forced down in Cort and up in Weston to a point where it would be profitable for Cort to export cloth, in which it has a comparative advantage. Wheat would continue to be exported from Weston to Cort.

³ The manner in which this would occur as the result of the rise of exchange rates in Cort on Weston to Cort's gold export point is explained in Luthringer, Chandler, and Cline, *Money, Credit, and Finance*.

Moreover, at this equilibrium the exports and imports of each country would balance without further movement of gold, and the prices of wheat and cloth would be about the same in both countries, allowing for costs of transportation.

For purposes of illustration, it may be assumed that such an equilibrium would be reached when the price of factors that formerly had cost a dollar in Cort had fallen to eighty cents, while the price of factors that formerly had cost fifty cents in Weston had risen to sixty cents. This adjustment would mean that Cort would no longer find it profitable to produce wheat, and Weston would no longer find it profitable to produce cloth. This would result from the fact that, at the new costs of production, it would cost more to produce wheat in Cort than the selling price of wheat imported from Weston, while in Weston the same situation would prevail as to cost of production of cloth and the selling price of cloth imported from Cort. This new situation is summarized in the table on page 198.

The adjustments that would take place in Cort and Weston would follow from the competition of enterprisers in each country for the factors of production. In Cort, enterprisers would find the profit from the production of wheat disappearing, and eventually vanishing, as wheat imports from Weston forced down the price of wheat. At the same time the outflow of gold would reduce purchasing power, and force down prices in general, including the price of cloth. Neither producers of wheat nor of cloth, therefore, could afford to pay as much for the factors of production as before.

MONEY COSTS OF PRODUCTION AND PRICES OF WHEAT AND CLOTH IN TWO HYPOTHETICAL COUNTRIES ON THE GOLD STANDARD

AFTER ADJUSTMENTS CAUSED BY INTERNATIONAL TRADE

CORT	WESTON
Cost of Production of one bushel of wheat . . . \$0.80	Cost of production of one bushel of wheat . . . \$0.60
Price of wheat per bushel . \$0.60 ^a	Price of wheat per bushel . \$0.60
Cost of production of one yard of cloth \$0.40	Cost of production of one yard of cloth \$0.60
Price of cloth per yard . . \$0.40	Price of cloth per yard . . \$0.40 ^b

^a Wheat would have to be slightly more than sixty cents a bushel in Cort to cover cost of shipment from Weston.

^b Cloth would have to be slightly more than forty cents per yard in Weston to cover cost of shipment from Cort.

But after the prices of factors of production, such as wages, had been forced down to a slight degree, it would become possible to make a profit in the cloth industry. As soon as the cost of factors had fallen enough, it would be possible to find a greatly enlarged market for cloth by exporting cloth to Weston. While factors of production could thus be used with profit in the cloth industry, they would still be too expensive to use in the production of wheat, which was being produced at a much lower money cost in Weston. The fact that enterprisers in Cort could afford to pay relatively more for labor and capital in cloth production than wheat producers could pay would thus tend to shift labor and capital from the production of wheat to the production of cloth. To put it in other terms, the cloth industry in Cort would soon be booming, while the wheat industry would become more and more depressed.

In Weston, on the other hand, the situation would be just the reverse. The possibility, at first, of being able to sell wheat at a much higher price in Cort would soon raise the price of wheat, and would lead enterprisers to attempt to increase the production of wheat by using more labor and capital. To obtain these additional factors of production they would offer to pay more for them, and the high price of wheat would make this possible. Gold would be flowing into Weston and would be increasing money incomes and prices, including the price of cloth. But the rising costs of production of cloth, as the factors of production increased in price because of the competition of enterprisers in the wheat industry for additional labor and capital, together with the relatively high price of cloth, would act as a force promoting the import of cloth from Cort. This would eventually lead to a fall in the price of cloth, and thus would limit the ability of enterprisers in the cloth industry to compete successfully with producers of wheat for labor and capital. As the price of factors rose, and as imports of cloth continued, the competitive position of cloth producers in Weston would be weakened, and more and more labor and capital would be diverted from the production of cloth to the production of wheat.

Equilibrium would finally be reached when the price of factors of production had risen to a point where it was no longer profitable to produce cloth in Weston. In this manner, in both Cort and Weston, the adjustment following shifts in costs of production and prices would produce fundamentally the same adjustments

that would be reached if trade were carried on by barter.

Both in the example in terms of goods and in the example in terms of money, an equilibrium is finally reached in which each nation finds it profitable to specialize in the production of the commodity in which it has a comparative advantage. Moreover, if allowance is made for differences due to costs of transportation, internationally traded products exchange at the same ratio in each country, or, in money terms, will sell at about the same prices. Finally, under gold-standard conditions, exports and imports will be equal in value without the necessity for further shipments of gold.

ADJUSTMENT UNDER INCONVERTIBLE PAPER MONEY STANDARDS

The prevalence of inconvertible paper standards throughout the world at the present time makes advisable an analysis of the manner in which the monetary mechanism of adjustment in international trade operates under this condition. The following analysis will indicate the manner in which adjustments are made in countries both of which are on a paper standard, or in a paper-standard country trading with a gold-standard country. In the illustration given, however, it will be assumed that both countries are on a paper standard.

Under gold-standard conditions, the necessary adjustments are generally made by exchange-rate fluctuations within the narrow limits of the gold points, and by gold flows. Under paper-standard conditions

the adjustments are effected by exchange rates alone. Since there are no gold points to confine the movements of exchange rates under paper-standard conditions, the shifts in exchange rates may be much more drastic. These wide fluctuations in exchange rates, in turn, set in motion economic forces that adjust exports and imports to one another and establish conditions of prices and profits in such a way as to induce specialization along lines of comparative advantage.

This may be illustrated as follows: Going back to the two countries, Cort and Weston, and the assumptions of the original illustration, it will be recalled that it was assumed that in Cort a given outlay for factors of production would permit the production of one bushel of wheat or of two yards of cloth. In Weston it was assumed that a given outlay would permit the production of one bushel of wheat or of one yard of cloth. Assume now that the currency unit of Cort is a monetary unit that, for convenience, will be called a dollar, while the currency unit of Weston will be called a peso. Moreover, assume that both countries are on a paper standard, and for the time being have not begun to trade with one another. Suppose that the outlay of a dollar in Cort will pay for the production of one bushel of wheat or two yards of cloth, while the outlay of a peso in Weston will pay for the production of one bushel of wheat or one yard of cloth. As in the previous illustration it will be assumed that each commodity sells at a price just covering its cost of production. The situation would then be:

Cort
1 bushel wheat = 1 dollar
2 yds cloth = 1 dollar
Weston
1 bushel wheat = 1 peso
1 yd cloth = 1 peso

MONEY COSTS OF PRODUCTION AND PRICES OF WHEAT AND
CLOTH IN TWO HYPOTHETICAL COUNTRIES ON PAPER
STANDARDS

BEFORE INTERNATIONAL TRADE TAKES PLACE

CORT		WESTON	
Cost of production of one bushel of wheat	\$1.00	Cost of production of one bushel of wheat	1 peso
Selling price of one bushel of wheat	1.00	Selling price of one bushel of wheat	1 peso
Cost of production of one yard of cloth . . . . .	.50	Cost of production of one yard of cloth	1 peso
Selling price of one yard of cloth . . . . .	.50	Selling price of one yard of cloth	1 peso

Assume now that the two countries begin to trade with one another. For purposes of illustration, it may be arbitrarily assumed that the exchange rate is at "one peso equals fifty cents." An exchange rate such as this could not be maintained, because at such a rate wheat exporters in Weston would find it profitable to ship wheat to Cort. Thus, wheat could be produced for one peso in Weston, could be exported to Cort and sold for a dollar, and, at the given exchange rate, a dollar would be equal to two pesos. Cloth importers in Weston would be unwilling to give as much as two pesos for a dollar, however, because at such a rate of exchange for dollars it would not be profitable to import cloth. That is, the cloth that could be bought for one dollar in Cort would sell for only two pesos in Weston.⁴

⁴ This price would not cover the cost of shipping cloth, the exact amount of which has been omitted from the illustration, but presumably would be sufficient to prevent trade at the assumed rate of exchange.

An exchange rate of "one peso equals fifty cents" would therefore be impossible. The exporters of wheat from Weston would wish to obtain pesos for the dollars paid them by wheat importers in Cort; but, in order to obtain pesos for dollars, they would be forced to accept a less favorable rate of exchange. Thus, suppose that competition forced wheat exporters, with dollars to exchange for pesos, to offer seventy-five cents to obtain one peso.⁵ Now at this new rate it would be profitable to export wheat from Weston to Cort and to export cloth from Cort to Weston. That is, at the exchange rate of "one peso equals seventy-five cents", cloth importers in Weston could obtain \$1.50 for two pesos, could buy three yards of cloth in Cort for \$1.50, and could import the cloth into Weston and sell it for three pesos. Wheat exporters in Weston could still make a profit by sending wheat to Cort because, even though they would have to exchange each dollar, acquired by selling wheat in Cort, for one and one-third pesos, this would still net them a profit over the cost (one peso) of producing wheat in Weston.⁶

Assume that the exchange rate of "one peso equals seventy-five cents" is an equilibrium rate; that is, at that rate the exports and imports of Cort and Weston precisely balance. The final adjustment would then be something like this: As the import of wheat into Cort increased, its price would tend to fall, and it would be-

⁵ In order to get rid of their dollars, wheat exporters would be willing to offer more in dollars for a given sum of pesos; this represents a fall in the dollar or a rise in the peso, depending upon one's point of view.

⁶ If seventy-five cents equals one peso, one dollar equals one and one-third pesos.

come unprofitable to produce wheat. Suppose that the price of wheat in Cort fell eventually to seventy-five cents a bushel. Conversely, as cloth was imported into Weston its price would fall, and it may be assumed that eventually it would sell for two thirds of a peso. The situation would then be:

MONEY COSTS OF PRODUCTION AND PRICES OF WHEAT AND CLOTH IN TWO HYPOTHETICAL COUNTRIES ON PAPER STANDARDS

AFTER ADJUSTMENTS CAUSED BY INTERNATIONAL TRADE

CORT	WESTON
Cost of production of one bushel of wheat . . . \$1.00	Cost of production of one bushel of wheat 1 peso
Selling price of one bushel of wheat 0.75 ^a	Selling price of one bushel of wheat . . 1 peso
Cost of production of one yard of cloth 0.50	Cost of production of one yard of cloth . . 1 peso
Selling price of one yard of cloth 0.50	Selling price of one yard of cloth . . 0.66 $\frac{2}{3}$ peso ^b

^a The price of wheat in Cort would be a little more than seventy-five cents to cover cost of shipping wheat from Weston.

^b The price of cloth in Weston would be a little more than two thirds of a peso to cover cost of shipping cloth from Cort.

Thus, the shift in exchange rates would have compelled an adjustment of prices and costs in Cort and Weston that would make it profitable for each country to specialize in the production of the commodity in which it had a comparative advantage and to import the other commodity. In Cort, the competition of wheat imported from Weston would force the price of wheat down from one dollar to seventy-five cents and, since

it would cost a dollar to produce wheat in Cort, its production would no longer be feasible. Similarly, in Weston, cloth would have fallen in price from one peso to two thirds of a peso, so that it would no longer be profitable to produce cloth in that country. It may be noted that, with the exchange rate at "one peso equals seventy-five cents", the price of the two commodities in either dollars or pesos is the same in each country. This is also a condition of the establishment of equilibrium.

As has been said, under gold-standard conditions, equilibrium results from such an adjustment of prices that, making due allowances for costs of transportation, internationally traded goods sell for about the same price in gold in all countries; under paper-standard conditions, the equilibrium is one in which exchange rates are such that the prices of internationally traded goods expressed in any one currency are about the same.

The shifts in exchange rates can be so quick and drastic that on the whole it is probably easier to arrive at a condition of equilibrium under paper-standard conditions than under gold, assuming that there is no factor such as a continuing paper money inflation. This is because the adjustment running from specie flows to price changes, that occur under the gold standard, may take some time to work out the needed price changes. Under paper-standard conditions, however, the exchange rate changes react immediately and sharply on import and export prices.

It is frequently implied that paper money standards cause a breakdown in international trade, or "make

trade impossible", because of the risks and uncertainties of fluctuating exchange rates. The evidence for such a view is slight. It should be noted, however, that exchange rates between paper standards will respond not only to changes in the balance of payments, but to any changes in monetary factors within the various countries causing changes in prices and costs of production in those countries. Assuming relative stability in the various national price levels, the pressure of economic forces is toward the establishment of an equilibrium in which international debits and credits are kept equivalent without either a continuous rise or fall in exchange rates. In other words, in the absence of monetary inflation or deflation within the respective paper-standard countries, foreign exchange rates in a paper-standard country may remain relatively stable. It is unlikely, however, that exchange rates would be as stable as between countries on a gold standard.

SOME QUALIFICATIONS

It must be noted that the foregoing illustrations are highly simplified, being designed primarily to trace the direction in which the most important economic forces work, and to trace the manner in which these forces react on one another. Care should be taken, therefore, not to draw erroneous inferences from these illustrations. For example, it must not be assumed that each country in the world must have an equivalence in value between exports and imports with each individual country. It is true that the money value of total international debits and credits for each country must

be the same. But this does not mean that this equivalence is maintained between each country and each individual foreign country with which it trades; the equivalence is in total claims due to and due from all foreigners.

Thus, the United States regularly exports to European countries more than it imports from them, and restores the balance in part by importing from countries such as British Malaya and Netherlands East Indies more than it exports to them; in other words, part of our exports to Europe pay for our imports from these Asiatic countries, these countries in turn receiving imports from Europe which are greater in value than their exports to Europe. Moreover, the illustrations have assumed that the only items entering into the balance of payments are the two commodities used and, in the gold-standard illustration, a limited amount of gold.

But there are many other items in the balance of payments. A nation that has a heavy credit balance on merchandise account may offset this by imports of services, or by exports of capital. Conversely, a nation with a heavy debit balance on merchandise account may be borrowing from abroad, exporting services, or living to a large degree on interest and dividend payments from its investments in foreign countries. The fact that those complications have been ignored in the numerical examples does not alter their fundamental validity as illustrations of specialization along lines of comparative advantage, and of the manner in which this is effected by means of price changes.

The illustrations given have also ignored the difficulties of shifting capital and labor from one industry

to another within the two countries. On the other hand, the extent of the shift that is necessary has been greatly magnified by the fact that the illustrations are based on only two countries and two commodities, and an abrupt change is postulated by assuming that there is a sudden change from a condition of no trade to trade between the two countries. While no qualification need be made as to the nature and direction of operation of the forces discussed, it should be pointed out that it would not necessarily follow that the wheat industry would be entirely wiped out in Cort, nor the cloth industry in Weston.

Thus, in Cort the wheat industry would not be entirely liquidated, in all probability, because land would be likely to fall more rapidly in price than wages. The result would be that eventually only the poorer grades of land would be withdrawn from cultivation, and, because of the relative shifts in the prices of land and labor, the remaining land would probably be less intensively cultivated. This would mean that the production of wheat in Cort would be greatly decreased, but need not disappear entirely. Moreover, the production of other agricultural products might increase. Conversely, in Weston, some of the more efficient textile factories might be able to survive the foreign competition, although the total production of cloth would undoubtedly be decreased. It must also be kept in mind that a decline in one industry is compensated by the expansion of another.

In addition, the adjustments in foreign trade are facilitated by the fact that most countries usually are im-

porting and exporting a great many commodities. Consequently, adjustments are spread over a number of commodities instead of merely two as in the example. In other words, instead of a drastic assumption of quickly transferring labor and capital from such widely differing industries as farming and textiles, the adjustment would usually occur through the shifting of labor from one branch of industry to a similar branch. Moreover, the extent of the adjustment, particularly in the short run, is usually much less. That is, shifts would be made by marginal adjustments spread over a number of industries instead of drastic adjustments in only two industries. This is not to ignore, however, that, if the pressure is sufficiently strong, labor will shift fairly quickly and in large numbers from industries as different as agriculture and textiles. This is illustrated by the rapid rise of the textile industry in the southern United States, and the city-farm movement of population during the 1930-1933 depression. There is thus a considerable degree of mobility of labor, although mobility is by no means perfect or instantaneous.

Capital once invested in productive agents such as land, buildings, and specialized machinery cannot, of course, be easily withdrawn from one industry and shifted suddenly to another. But it can be withdrawn slowly by allowing the productive agents to depreciate, or by selling them for scrap value. More important still, adjustment can be made with the passing of time by changes in the direction of new capital investment.

Again, it must be noted that comparative advantages

are not fixed for all time, but may change very greatly. The lines between those goods that are exported, those neither exported nor imported in significant amounts, and those imported, are by no means fixed and immutable.⁷ They can change in response to changes in demand for goods, changes in productive methods, new discoveries of resources, changes in population, and changes in the balance of payments, such as a sudden cessation of foreign borrowing or lending. Sometimes changes of this kind come suddenly and initiate powerful economic forces that alter the direction and relative quantity of production. A change of this type occurred in recent years in Japan when the 1930-1933 depression, and increased competition from rayon, caused a collapse in the export market for raw silk, previously the most important Japanese export. This initiated forces that led to greatly increased exports in other lines of production in Japan, as indicated by the following figures:⁸

JAPANESE EXPORTS

	PERCENTAGE CHANGE FROM 1929 TO 1934		PERCENTAGE SHARE IN TOTAL JAPANESE EXPORT VALUE	
	In Yen Value	In Quantity	1929	1934
Raw silk	- 63	- 13	37.3	13.4
Cotton piece goods . . .	+ 19	+ 43	19.6	23.0
Other export articles . .	+ 50	+ 99	43.1	63.6

⁷ There are some classes of goods and services that are both exported and imported at the same time. This may be due to special conditions of transportation costs, different qualities of goods in the same general class, seasonal factors of production, and a host of other particular conditions.

⁸ League of Nations, Economic Intelligence Service, *Review of World Trade, 1934* (Geneva, 1935), p. 43

Although changes of this kind are sometimes abrupt, often there is a well-defined long-run trend in the changing nature of the commodities in which a nation has a comparative advantage. This means that frequently adjustments are not made by actually wiping out a significant part of a given industry; indeed, the industry may even continue to grow. But over a period of years other industries will grow more rapidly, and there will be a great change in the relative importance of various industries.

Finally, although free trade has been assumed in the illustrations, free trade no longer exists anywhere in the world. All nations, to a greater or lesser degree, interfere with the free movement of commodities in international trade. In some cases, this interference is largely limited to protective tariffs. In other cases, of which Germany and Russia are perhaps the most notable examples, controls have gone far beyond this point. The next task, therefore, will be to analyze the relation of government to international trade and finance.

CHAPTER X

Instruments of International Commercial Policy

THE term "international commercial policy" may be used in a broad sense to cover governmental policy as to the regulation and control of the economic relationships between its own citizens and the citizens of other nations. At the one extreme of commercial policy is a policy of *laissez faire* and free trade. Essentially, this means that international economic relationships should be left to the "automatic self-regulation" of competitive economic forces. This is fundamentally a policy of economic internationalism. At the other extreme is the policy of autarchy, or national self-sufficiency, which aims at the complete elimination of international economic relations, or at least at their minimization. This is a policy of economic nationalism.

The present commercial policies of most of the nations of the world stand somewhere in between these two extremes. No nation that wishes to maintain a modern industrial civilization can be completely self-

sufficient, and it is to be doubted whether the intelligent people of the nations with the most nationalistic policies believe for a minute that complete self-sufficiency is attainable.

On the other hand, there are comparatively few people who would today argue for a policy of complete *laissez faire*. At the very least, most advocates of free trade will admit the need for certain sanitary controls to prevent the import of harmful or adulterated products, or will agree that governmental controls to prevent unfair competitive methods are desirable. Many will also agree that certain industries that are vital for military reasons should be protected.

Therefore, the issues of commercial policy are rarely posed as an unqualified choice between free trade and autarchy; rather the main issue of commercial policy is whether, in the main, it shall incline in the general direction of freer trade and economic internationalism, or whether the direction shall be toward economic nationalism and greater self-sufficiency. In detail, a policy of economic nationalism becomes very largely a question of deliberately protecting and fostering the establishment or survival of certain industries that could not exist under free competition. This objective may be obtained by a variety of devices or governmental controls, and the next step will be a brief description of the more important of these implements of control.

THE TARIFF

Perhaps the most generally used control device, certainly the most important in the case of the United

States, is the tariff. A tariff, or customs duty, is simply a tax levied on goods imported from a foreign country or exported to a foreign country.¹ Like all taxes a tariff may be used primarily to secure revenue, or the revenue may be made secondary to the attainment of some objective of policy. Almost all taxes affect economic life in one way or another by making some economic activities less profitable than others, but usually these economic effects are regarded as secondary to the purpose of securing revenue. In the case of tariffs, however, the economic effects of the tax are often considered to be of greater importance than the revenue that may result.

Tariffs for Revenue. Before the Civil War over ninety per cent of the revenue of the federal government was derived from tariffs, but since the World War only about fifteen per cent of federal revenue has been obtained from this source. Perhaps the chief explanation of this situation has been the mounting cost of government, which has necessitated the use of new sources of revenue such as the income tax and a variety of taxes on corporations. Another reason, however, has been that, as the tariff has increased in importance as an implement for the control of foreign trade, its revenue-producing possibilities have received less consideration.

If revenue is the primary objective of a tariff the rate must often be set quite low. A tax like the tariff will usually reduce consumption of the commodity on which it is levied by causing a rise in price. The extent to

¹ In the United States, tariffs are levied only on imports.

which consumption will be reduced will of course depend very largely on the elasticity of demand for the product. If demand is very elastic a high tariff will produce very little revenue because the diminution of demand will greatly reduce importation. For this reason, low or moderate duties will frequently yield greater revenues than high duties. A tariff will often stimulate production of the commodity by domestic producers who do not have to pay the duty, but on the domestic production no revenue is received. If it is desired to use the tariff primarily as a revenue device, and not for protection, it may therefore be advantageous to place an equivalent internal excise tax on the domestic production of the commodity. The levy of a tariff duty on imports of a commodity, and of an excise tax on the domestic production of the commodity, will, of course, raise its price. But a portion of the higher price that consumers pay on the amount consumed will go to the government as revenue, which is the object of the two taxes. Obviously such a scheme is not "protection" because there is no discrimination against the foreign source of supply in favor of domestic producers.

Tariffs for Protection. The primary object of a protective tariff is to prevent the importation of commodities, and thereby to stimulate domestic production of the particular commodities on which duties are levied. In other words, there is a fundamental conflict in purpose in attempting to use a tariff on a particular commodity as both a revenue device and as a protective device. To the extent that commodities enter from abroad in spite of the tariff, there is no protection, although

revenue may be realized. To the extent that commodities are excluded there is no revenue, but there is protection for the domestic producers of the commodity. If tariffs were made so high on all competing products that none was imported, protection would be complete, but not a dime of revenue would be obtained by the government. Moderate duties, on the other hand, might provide bountiful revenues but very little protection since few foreign products would be excluded.

The exclusion of competing foreign commodities stimulates domestic production of those commodities by decreasing supply relative to demand, and thereby causing a rise in their prices, it being hoped that this will make domestic production of the commodities profitable. Unless a tariff raises prices it will be ineffective in its purpose of stimulating domestic production in protected lines.

For this reason it is futile, under competitive conditions, to levy import duties on commodities in which a country has a comparative advantage and which it exports. A commodity that is exported will tend to sell at about the same price at home and abroad, making due allowance for costs of transportation. Since a tariff does not benefit domestic producers in their export markets, and since the foreign and domestic prices are kept in line, a tariff on commodities that are exported will usually be practically without effect. Many of our own tariff duties are almost completely ineffective because they are levied on commodities that are competitively produced and are exported. But under conditions of domestic monopoly, or monopolistic compe-

tition, it might be possible to take advantage of the tariff by charging a monopoly price at home and selling at a lower competitive price abroad. The prevalence of monopolistic competition probably explains why many industries that are allegedly competing, and that export in large quantities, still wish to have tariff protection.

The chief demands for protection come, however, from those industries that do not have a comparative advantage, and that, in the absence of governmental intervention, are therefore faced with foreign competition in the domestic market. These industries may be in the situation of the wheat industry in Cort or the cloth industry in Weston in the illustrations given in the previous chapter. When trade was opened up, a series of price adjustments was set in motion, as shown in the illustrations, that made it unprofitable to produce the commodities in which there was no comparative advantage. Thus, in Cort it costs eighty cents to produce wheat that could only be sold at sixty cents a bushel, because of the competition of imported wheat. It will be remembered that it was this price adjustment that shifted labor and capital into cloth production instead of wheat production.

Suppose, however, that the farmers in Cort had demanded protection and received it. The result would have been that wheat would have increased in price in Cort, and that wheat producers would again have been in a position to compete with cloth producers for capital and labor. If the tariff were high enough to exclude wheat from Weston entirely, trade would come

to an end, and the situation would return to that before trade was opened up. But as a result, neither Cort nor Weston would have the advantage of a specialization along lines of comparative advantage. Real incomes would therefore be lower in each country. The protective tariff does not give something for nothing. To the extent that it is effective it involves a cost that falls on consumers in general and imposes a burden on the more efficient export industries.

An effective tariff means that productivity will be decreased, because of the refusal to allow industries with a comparative advantage to replace those in which there is a disadvantage. In other words, protection means governmental fostering of industries that are relatively inefficient at the expense of those that have a comparative advantage. In consequence, prices will be higher relative to money incomes, and the standard of living will be lower.

It should be noted that in the long run a protective tariff will neither increase nor decrease total employment. It will simply determine whether workers are concentrated in industries in which a nation enjoys a comparative advantage, or in industries in which it is comparatively inefficient. If, on the one hand, specialization along lines of comparative advantage is allowed, both exports and imports will be larger, and a larger proportion of the population will be engaged in export industries that represent industries of comparative advantage. If, on the other hand, a nation starts to levy protective tariffs that are really effective, it will reduce imports *and exports* as well, unless there is some

basic change in the situation, such as a sudden increase in capital exports, which might defer this adjustment. Thus, foreigners get the greater part of the purchasing power with which to buy our goods by exporting goods to us. If we shut out their exports they no longer have the purchasing power to buy our exports. Effective tariffs will thus divert labor and capital from industries that have a comparative advantage, and have been exporting, to domestic industries in which prices have been raised by restricting foreign imports. No additional employment is thereby provided. Labor and capital are simply shifted from one line of industry to another.

But though this is true in the long run, *changes* in tariffs, either up or down, may temporarily cause unemployment. If some domestic industries have long enjoyed protection and are suddenly deprived of it, there might be unemployment until factors of production had been shifted from one industry to another. In other words, there might be a transition period in which maladjustments occur. Eventually, this would be offset by the expansion of export industries, which must necessarily ensue since increased imports must lead to increased exports of goods or services. But, if a reduction of tariffs may temporarily cause maladjustments, the same is true of an increase in tariffs, because they would soon affect export trades adversely.

Although short-run maladjustments must be considered in commercial policy, particularly in depressions, they cannot be a major factor in the determination of long-run policies. The protective tariff should

be a question essentially of long-run policy. Fundamentally protection must be favored or opposed on grounds of the desirability of maintaining certain industries that would not otherwise survive. Since tariffs have no ultimate effect on employment, the question of employment is wholly irrelevant to the determination of long-run commercial policy.

DIRECT SUBSIDIES OR BOUNTIES

Instead of attempting to stimulate certain industries by protective tariffs, nations occasionally resort to direct subsidies or bounties. This is sometimes done when a nation wishes to foster export industries that would not ordinarily benefit by tariff protection. Similarly, a nation may subsidize its merchant marine by outright grants or by exceedingly generous contracts for carrying mail.

Bounty 151
It will aid in the understanding of protective tariffs if it is kept in mind that they are fundamentally similar in effect to direct subsidies or bounties. In the case of a bounty there is a direct payment by the Treasury to the producer of the commodity for which a bounty is paid. This appears as a governmental outlay or expense, and must sooner or later be met from general taxation. The bounty is thus a charge on the community at large to favor or support some particular industry. Now all this is plain as a pikestaff to most people, but many find it difficult to understand that tariffs likewise are in effect a kind of subsidy paid by consumers. Thus many people deplore subsidies as an outrageous iniquity, and favor tariffs. This is absurd. The tariff gives a sub-

sidy to domestic producers to the extent that it shuts out competing foreign goods and permits a rise in the prices at which the protected goods are sold in the domestic market. The advance in prices forces purchasers to pay more to obtain these products, and it is the consumers of these products who are paying the cost of the subsidy.

The direct subsidy or bounty is far superior to the tariff as a device for favoring specific industries. To begin with, the fact that the costs of bounties are a matter of budgetary record, and thus of public information, may serve to restrain the reckless and extravagant granting of bounties. This is undoubtedly why many protectionists are emotionally "conditioned" against recognizing the essential similarity between protective tariffs and bounties. Tariffs permit the granting of enormous subsidies without having the costs appear in the government budget. Tariff advocates thus can obtain protection for themselves or their friends and claim that what cost there may be is borne by the foreigner. It is the exception rather than the rule for foreigners to bear the burden of a tariff, but it is convincing political propaganda to keep this ancient falsification alive—a pretence of getting something for nothing. Actually, with very few exceptions, the cost of the subsidization is borne by those domestic consumers who must pay the higher prices that result from effective tariffs.

A second respect in which direct bounties are superior to tariffs is that they enable the cost of subsidization to be paid from general taxation, particularly from the

income tax which can be levied on an ability-to-pay basis. If an industry is to be subsidized the cost should be borne on some basis more equitable than the arbitrary taxation of the people who happen to be consumers of the protected commodity. Moreover, tariffs on articles of wide consumption such as sugar or wool constitute regressive taxation; that is, taxation of this type tends to fall more heavily on the poor than the rich.

EMBARGOES AND QUOTAS

In addition to tariffs and direct subsidies, embargoes and quotas may be used as implements of control in commercial policy. From the standpoint of effectiveness of control, these are perhaps more certain of result than tariffs. Unless tariffs are set very high, economic forces may operate to cause goods to enter over tariff barriers, and the desired degree of protection may not be obtained. As commercial policies have become more nationalistic, embargoes and quotas have enjoyed an increasing popularity with the statesmen who use them, and have caused an increased resentment on the part of those against whom they are leveled.

Embargoes. Embargoes are absolute prohibitions on the movement of goods, or in some cases, on the movement of capital. If a country absolutely forbids the entrance of foreign commodities, the field is left free to domestic producers. Embargoes may also be applied to exports; for example, by prohibiting the shipment of goods to belligerent nations. Sometimes capital exports are subjected to embargo; that is, the citizens of a nation may be forbidden to make foreign loans, either for po-

litical reasons, or because of the fear that exports of capital may lead to an outflow of gold at a time when gold reserves are dangerously low.

Goods Quotas. Quotas on imports of goods are, in effect, partial embargoes. That is, only a fixed quantity of goods may be imported during a certain period, and all amounts above the quota are denied entrance. Sometimes goods within a quota are subjected to a tariff, the quota and tariff being used as joint instruments of control. Quotas demand an elaborate administrative machinery, and frequently lead to much international ill will.

Thus, if a country decides to permit the entry of only 100,000 bushels of wheat, it must set up machinery for allocating a share of the quota to each of a number of exporting countries. Disputes and ill feeling almost inevitably result, since no one country will feel it is being treated fairly. In addition, complicated quota systems are an open invitation to the bribery and corruption of officials, as individual exporters try to get advance information of quota changes or preferential consideration. Similar in effect to goods quotas are so-called linked-purchase agreements, requiring the purchase of a proportional amount of domestic products for every import from a specific foreign country.

Exchange Quotas. Exchange quotas are used chiefly by countries that have established a thoroughgoing exchange control in order to maintain the foreign exchange value of their currencies at an artificially high level. A usual feature of these exchange controls is a law or decree compelling exporters to sell to the control

bureau the foreign currency proceeds of exports. The demand for these foreign currencies can then be artificially controlled by refusing to allow importers to buy foreign exchange except as the control bureau wishes. At the same time, steps are taken to control the extent to which importers may pay foreign exporters by allowing the latter to draw drafts on them, since payments of this kind obviously increase the supply of domestic currency offered against foreign currencies in the exchange markets. As a result of restricting the supply of the domestic currency for sale on the foreign exchanges, and the demand for foreign currencies, it is possible to peg the exchange value of the domestic currency at an artificially high level.

In many instances the control bureaus assign arbitrary exchange quotas to importers, and thus not only control the amount of imports, but the composition of these imports. Thus if it is desired to give further protection to agriculture, the control bureau may assign a very minute exchange quota to importers of certain agricultural products. It is apparent, therefore, that exchange quotas may be used to protect certain industries in the same manner as tariffs, goods quotas, or embargoes. While exchange controls are often adopted to "protect" the foreign exchange value of a currency, in most cases they also involve a system of exchange quotas that are used to protect specific industries from foreign competition. Exchange quotas are used to an extreme degree by Germany and other countries that have established a far more thoroughgoing governmental control of foreign trade than is usually to be

found in countries that confine themselves very largely to the use of tariffs.

MISCELLANEOUS ADMINISTRATIVE CONTROLS

In addition to the control devices that have been mentioned, there are a variety of administrative controls that, although used ostensibly for other purposes, are in reality used frequently as devices to protect certain industries from foreign competition. Common examples are the various quarantines and import restrictions that are used to protect public health or to prevent the transmission of various animal or plant diseases. In some cases these are necessary and valid exercises of police power; though all too often they are but a cloak for preventing the entrance of foreign goods that would otherwise be imported. Other devices are arbitrary labeling requirements that are adopted suddenly and made retroactive in regard to goods that are in process of shipment or in bonded warehouses. Another favorite device is the arbitrary valuation of imports in collecting duties. Thus, if a country wishes to discriminate against certain foreign imports it may place an arbitrary valuation on them so high that the resulting tariff, levied as a percentage rate on this valuation, will be prohibitive.

COMMERCIAL TREATIES AND AGREEMENTS

Nations commonly enter into treaties and trade agreements with one another as to international trade. Fre-

quently these treaties involve mutual concessions as to the tariff rates on imports from one another, and the concessions that one country will make to another is not always a matter of amicable bargaining. Failure to reach a satisfactory agreement sometimes results in attempts at coercion by means of discriminatory duties, and these in turn may be countered by retaliatory duties. Some countries establish two tariff schedules for the same commodities, one a maximum and one a minimum, the minimum rates being applied to those countries that are willing to negotiate satisfactory trade agreements, and the maximum to all others.

It is very common for nations to negotiate "most favored nation" treaties with one another. Thus, each of two nations may agree that it will treat exports from the other as favorably as it treats exports from any third nation. The essential purpose of the most favored nation agreement is to prevent discrimination. These agreements may be either conditional or unconditional.

An unconditional most favored nation agreement between two states is an agreement to extend to each other any favors and concessions granted by either party to a third state. Thus, if two states, A and B, have an unconditional most favored nation agreement, any tariff reductions which A makes on products from a third state X, must be automatically extended to exports of those products from B.

A conditional most favored nation agreement provides that favors and concessions shall be extended by one contracting party to another only on condition that the other contracting party makes equivalent conces-

sions. Thus suppose that country A has a conditional most favored nation agreement with country B. Assume that country X negotiates a trade agreement with B in which B agrees to lower duties on certain exports from X because X agrees to lower duties on certain exports from B. Under an unconditional most favored nation treaty B would be forced to extend the same tariff reductions to A that had been extended to X; but under a conditional most favored nation treaty these concessions are extended to A *only on condition* that A makes tariff reductions on products from B equivalent to those that X has made.

Prior to 1922 the United States followed a policy of negotiating conditional most favored nation treaties, but since that time it has followed a policy of negotiating treaties of the unconditional type. Until recent years, however, tariff bargaining for mutual reduction of duties has not been a particularly important phase of the international commercial policy of the United States. Our tariffs, on the whole, have been quite high, and we have been unwilling to lower them significantly in order to obtain concessions from other countries. We have been anxious to obtain most favored nation treatment in the sense that we have wished American exporters to be able to compete on a basis of equality with the exporters of other nations in foreign markets. To obtain this we have been willing to promise not to discriminate among foreign nations, but to treat all on an equal basis. But equal treatment has meant the application of the same schedule of very high duties to all, a not particularly inviting inducement for the for-

eigner to grant most favored nation treatment to this country.

To obtain nondiscriminatory treatment, our tariff laws of 1909, 1922, and 1930 authorized the President at his discretion to impose duties over and above the regular rates if foreign countries discriminated against our products. Indeed, the tariff act of 1930 empowered the President to put an embargo on imports into this country from countries discriminating against our exports. Thus our policy has been one of extremely high tariffs, coupled with a threat to discriminate against foreign countries that did not treat exports from this country as favorably as they treated exports from any other countries, even from those giving them concessions of major importance. Needless to say, our success in negotiating unconditional most favored nation treaties under these conditions was not striking. At the present time, however, much progress is being made in negotiating new reciprocal trade agreements based upon mutual tariff reductions.

*discriminatory duties are higher on goods
from one country than ^{or} same goods from another
country.*

C H A P T E R X I

International Commercial Policy

FROM the foregoing brief description of the instruments of control in international economic relations the discussion will proceed to a consideration of the arguments in favor of free trade, on the one hand, and the arguments in favor of a policy of economic nationalism and protection, on the other. Space does not permit more than a brief consideration of the main issues in what is one of the major problems of the present day; namely, whether the world shall try to rebuild the international economic life that grew up during the nineteenth century, or whether the economic nationalism of the post-war period, which became increasingly acute during the 1930-1933 depression, is to chart the trend of future commercial policies. Whether the trend of these policies will be toward freer trade or toward economic nationalism is of great significance both for international peace and for the economic welfare of the nations of the world.

ARGUMENTS FOR A COMMERCIAL POLICY OF FREE TRADE

SPECIALIZATION ALONG LINES OF COMPARATIVE ADVANTAGE

The case for free trade has largely been developed by implication in Chapter IX, and in the discussion of the economic effects of protective tariffs in Chapter X. The essence of the case for free trade is the belief that free competition will lead each nation to specialize in industries in which it has a comparative advantage. Under the free operation of competitive forces each nation would export goods in the production of which it had a comparative advantage and, in turn, would receive in exchange imports of those commodities in the production of which it was, comparatively speaking, less efficient. Thus it is argued that free trade will lead to the most efficient use of the factors of production in the various nations of the world and consequently that productivity, and hence the standard of living, will be higher than can be obtained under any other system of commercial policy.

This argument does not assert that free trade will equalize standards of living all over the world; some nations with abundant natural resources and a highly developed technique of production, such as the United States, would have a high per capita productivity and a high standard of living as compared to less fortunately endowed countries, such as Italy or Japan, where per

capita productivity is lower. But the free trade argument does assert that the standard of living in Japan and Italy, as well as in the United States, would be higher, if each specialized along lines of comparative advantage, than would be the case if each tried to follow a policy of self-sufficiency. Generally speaking, the case for free trade applies in the international sphere the same arguments for the regulation of economic life by competitive forces that are used to justify the system of free private enterprise within a given country.

To the free trader, the fact that some goods can be purchased more cheaply from abroad than they can be produced at home is clear evidence that the community as a whole will benefit by importing such goods rather than by producing them domestically. To do the latter would involve an uneconomic use of labor and resources that would operate to reduce the standard of living. There are few people today who are such ardent free traders that they would categorically assert that governmental regulation of international trade is never justifiable.

The typical free trader strongly believes, however, that the presumption is always in favor of a policy of no governmental interference with trade; the circumstances and conditions that justify governmental intervention are regarded as few and on the whole relatively unimportant, with the burden of the proof on those who seek to justify the wisdom of governmental aid or protection. Thus, free traders believe that no one should receive bounties or tariff protection unless it can clearly be shown that, owing to special circum-

stances, governmental intervention would indirectly benefit the community as a whole as well as the immediate beneficiaries of governmental aid. This, in most cases, is extremely difficult to prove on economic grounds.

INCIDENTAL ARGUMENTS

In addition to the essential argument for free trade that has just been stated, there are a number of ancillary arguments which are not without weight. Some of these arguments will be briefly considered.

Political Argument. One of these arguments is the corrupting influence of bounties or protective tariffs on the political life of the nation. In this country, for example, the tariff is perhaps the most ancient and dishonorable pork barrel. Although, as will be indicated presently, there are some valid arguments for protection, it is extremely difficult to follow a rational protectionist policy. This is because of the manner in which tariff laws are usually made. There is almost no consideration of the national interest as a whole. A new tariff law emerges as the result of a series of political deals, vote trading, and logrolling among members of Congress who have been submitted to a barrage of pleas, threats, and fallacious arguments from lobbyists and pressure groups. The appalling ignorance and insincerity of most political comment on the tariff is one of the more depressing phases of our national life. A system of protective tariffs invites the promotion of sectional and group interests at the expense of the national welfare by opening each member of Congress

to attack from his local constituents unless he obtains for them a suitable serving from the pork barrel. The growing demand for the subsidization of agriculture is but the logical outgrowth of a technique originating in the pressure for tariff favors. In the words of one commentator: "Even prohibition has hardly contributed more than protection to the staggering corruption which has become almost general throughout our political organization."¹

The free trader accordingly argues that it is better to have the government refrain from a policy of granting favors in the form of bounties or tariffs, since this leads to lobbying and pressure-group activities that corrupt political life and convert an alleged system of rational protection for the national welfare into a glorified racket. This is all the more dangerous in that the dense ignorance of both the public and most politicians as to the nature and effects of tariffs, together with the fact that the costs of protection are usually concealed and not immediately apparent in the national budget, peculiarly invite the sacrifice of national welfare to the advantage of special interests.

Anti-Monopoly Argument. Another argument that has enjoyed some popularity in this country is the contention that the tariff "is the mother of trusts"; that is, a belief that the tariff has fostered the growth of monopolies by eliminating foreign competition. It is perhaps dubious at best that the tariff has been one of the most important factors in the establishment of monopolies. Moreover, many monopolies of the present

¹ Rogers, J. H., *America Weighs Her Gold* (New Haven, 1931), p. 75

day are international in scope. It is undoubtedly true, however, that in some instances high tariffs increase the ability of monopolies to exploit the public, and that occasionally foreign competition, if it were allowed to operate, would be a healthy corrective to the abuse of monopoly power.

If this country is to follow a policy of reliance on free competition as the regulator of economic life, it is quite inconsistent to discriminate against foreign competition, which in the case of some industries is the only effective competition to be found. If competition is assumed to be a necessary and healthy feature of the economic system, which is certainly one of the basic assumptions of the American economic system, there is no economic logic in discriminating against foreign competition merely because it is foreign. This, of course, assumes that the competition, whether domestic or foreign, is "fair competition"; that is, competition on the basis of economic efficiency, and not on the basis of fraud, deceit, or discrimination in price.

Free Trade and International Peace. Finally, there is some reason to believe that a policy of noninterference by the government in international trade is, on the whole, more conducive to peace than a policy of economic nationalism. Thus, it is argued that international trade provides a means whereby nations that are devoid of certain natural resources such as petroleum, iron, tin, rubber, and the like, are able to obtain access to these essentials of modern industrial civilization. In the absence of trade the only means of acquiring these resources is war and territorial conquest. Many of the valuable resources of the world are not evenly diffused,

but are concentrated in the possession of a handful of fortunate nations. Unless the people of other nations are allowed to obtain access to these resources a series of conflicts between the "have-nots" and the "haves" appears to be inevitable.

This problem of access to raw materials has become increasingly acute since the World War, because of the restrictive trade policies followed by many of the nations and empires of the world. These policies, in turn, lend color and support to the militaristic groups in dissatisfied nations, such as Japan, Italy, and Germany, who claim that the inability to obtain raw materials by trade makes necessary their acquisition by territorial conquest. One of the most important questions now before the League of Nations is the problem of lowering trade barriers in such a way as to lead to a peaceful solution of this problem. The free trader believes that a peaceful solution hinges on a free acceptance of exports from the "dissatisfied" nations in payment for raw materials. This solution, it may be noted, does not imply that the nations with abundant resources will lose by the trade. Presumably they will receive more in exchange than could be obtained without trade; otherwise the trade would not take place. The free trade solution simply advocates a policy of allowing the producers of raw materials to sell them to those who are willing to pay the highest prices for them.

Another aspect of this problem is the constant aggravation of international ill will that results from changes in tariffs, quotas, and administrative regulations designed to control international trade in what is conceived to be the national interest, without any regard

for the effects of these measures on the economic welfare of other countries. A case in point is the veritable frenzy of protectionism that was displayed in the Hawley-Smoot Tariff of 1930 in which the Ossa of still higher duties was piled on the Pelion of duties in many cases already prohibitive. The new tariff resulted in an immediate and violent protest from thirty-three foreign nations. Many of these regarded it as a declaration of economic war, and threatened drastic retaliation. Since a policy of protection invariably involves discrimination against foreign sources of supply it almost inevitably leads to international resentment and ill will.

This is particularly the case when duties are changed frequently and without notice, or when arbitrary and discriminatory administrative regulations are used to supplement tariff controls. Although the United States has not been so bad an offender on these counts as some other countries, the extreme height and breadth of our protective tariff, together with the fact that since the war we have been a creditor nation, have done much to foster resentment against this country, particularly on the part of debtor countries.

ARGUMENTS FOR PROTECTION AND NATIONAL SELF-SUFFICIENCY

Although few informed people deny the strength of the economic arguments in favor of free trade, there are many who challenge free trade as necessarily the

most advantageous policy for all countries under any and all circumstances. Some believe that the economic cost of a policy of protection is more than compensated by advantages of a political or military nature. Others believe in the protection of "infant industries" in new countries. Some frankly advocate a high degree of self-sufficiency as affording a greater degree of economic stability and security.

All of these arguments have at least some pretense of intellectual respectability. But, in addition, a policy of protection is sometimes justified by arguments that are sheer economic nonsense—arguments that are found chiefly in political orations, and which the general public takes to its heart with the queer affection that it always seems to have for economic fallacies. In general, it can be said that the really valid arguments for protection are the ones that have the least popular appeal. In the brief discussion that follows only the more important arguments can be considered. These arguments may be classified as follows: (1) arguments asserting that protection brings an economic gain that counterbalances the immediate cost; (2) arguments asserting that protection brings political or social gains that justify the economic cost; (3) nonrational arguments resting on erroneous economic thinking.

ALLEGED ECONOMIC ADVANTAGES OF PROTECTION

The Infant-Industry Argument. This argument has a considerable measure of validity when its proper lim-

itations are recognized. The infant-industry argument acknowledges the fundamental soundness of a policy of free trade as a permanent commercial policy. However, it is argued that it may be of advantage to new and undeveloped countries to stimulate the establishment of manufacturing industries before this would occur as a result of the operation of competitive economic forces.

Thus, the establishment of manufacturing industries in undeveloped countries may be delayed by the fact that similar industries in older countries have incidental advantages arising from long experience, and may offer extremely severe competition to newcomers in the field. Moreover, initial costs may be large, and enterprisers may be loath to undertake the risks. In due course of time the opportunities for the successful launching of new industries would be so great, it is argued, that their establishment would occur without governmental assistance. But, if new industries are offered protection, this development may occur much sooner than would otherwise be the case. The alleged advantage of this earlier development is believed to warrant such aids as bounties or protective tariffs. It is sometimes further contended that governmental assistance of this kind will cause the country to develop more rapidly, by attracting foreign capital and trained workers to the new country to take advantage of the lucrative opportunities thus provided.

There may be merit to these claims, although the advantages of hastening industrial development are easy to overemphasize. But, regardless of this aspect

of the problem, there are certain limits to the infant-industry argument that are usually overlooked in popular discussion. First of all, the most convincing advocates of infant-industry protection are usually careful to point out that the protection should be temporary and not permanent. That is, after the new industries have been given time to establish themselves, the protection should be removed, and they should be left to their own competitive devices. If they cannot survive foreign competition, it is clearly evident that the country does not possess a comparative advantage in those lines, and there is no economic justification for continuing to support these industries at public expense and thus to perpetuate an error in the application of the policy of infant-industry protection. The main hindrance to a rational application of infant-industry protection is that the industries thereby created will undoubtedly claim they have a vested interest in continued protection, and will resist removal of duties by every device of political pressure and logrolling at their command. This has been the general experience of the United States.

A second limitation on the infant-industry argument is that it is logically applicable on an extensive scale only to a country that is largely agricultural. If a country is already developed industrially it cannot, to any significant degree, increase the extent of its industrialization by infant-industry protection, since this would mean an attempt to develop some industries at the expense of others. Our earlier tariff policy was an open and avowed subsidization of industry at the expense of agriculture. Since the greater part of our exports are now

manufactured goods or semi-manufactures, protective tariffs to protect new industrial infants would probably hurt other industries as much as they would American farmers, both groups suffering to the extent that their export markets would be reduced, and they would be forced to pay higher prices for protected products.

It is believed by many economists that, although the infant-industry argument had some validity for this country until the latter part of the nineteenth century, there is today little justification for its application. It is quite possible that the textile industry and iron and steel industry were greatly stimulated by infant-industry protection and consequently reached an advanced state of development much earlier than would otherwise have been the case. On the other hand, the automobile, moving picture, and radio industries have benefited little from protection but, nevertheless, quickly grew to great size and provided formidable competitors in the world markets from almost the very start.²

The Tariff and the Conservation of Natural Resources.

It is sometimes argued that a policy of protection is justifiable to the extent that it promotes the conservation of exhaustible natural resources. Thus it is claimed that the long-run economic interests of the nation are not best served by exporting to foreign nations our rich heritage of natural resources. It is said that a policy of *laissez faire* has resulted in a wasteful competitive exploitation of our resources for the sake of a temporarily profitable foreign trade that will deplete the supply

² Graham, F. D., *Protective Tariffs* (New York, 1934), p. 78

of natural resources for future generations; we shall export the most easily obtained part of our supply of petroleum, mineral, and forest resources, and exhaust the fertility of our soil, to the profit of those engaging in foreign trade, and to the detriment of the future economic weal of the nation.

Interpreted with proper reservations, these assertions may have some validity, and, if our commercial policy were largely based on sound considerations of conservation, they would evidence a greater economic wisdom than is now the case. But this argument throws open the whole question of conservation and, in addition, raises the question of the equitable distribution of natural resources among the people of the world. If each nation should strive to prevent the exportation of scarce and irreplaceable raw materials, most of the nations of the world would be deprived of many of the essential materials of modern industrial civilization. Even this country would be faced with a shortage of tin, manganese, nickel, and a host of other products. With our vast consumption of petroleum it is quite conceivable that in a few years we may be glad to be a net importer rather than a net exporter of petroleum products.

But granting that a nation wishes to conserve certain of its natural resources by reducing their rate of exhaustion, the best way to do this is not by following a policy of indiscriminately high import duties, with the hope that, as an indirect result of this policy, those exports involving the exploitation of natural resources will be decreased. Any control of foreign trade, with conservation in view, would best be effected by export embargoes

or by amending the Constitution so as to permit export taxes. Since both of these measures would adversely affect the profits of important producing groups in this country, the chances of measures of this type being taken appear to be slight.

In any event, our own consumption of our exhaustible natural resources such as minerals, petroleum, and forest products is so great that any attack on the conservation problem is, for the most part, a domestic issue, with the foreign trade aspect of the problem decidedly secondary in importance. Any thoroughgoing conservation plan would probably tend to raise the present prices of natural resources and would thus retard present utilization. This would automatically reduce exports as well as domestic consumption without the necessity for any additional foreign trade control. A conservation program should really involve the abolition of duties on mineral or forest products that we were attempting to conserve. Actually the producers in some of the natural resource industries have demanded and received tariff protection although that is flatly contrary to a conservation policy. Such duties, by preventing foreign imports, tend to a more rapid exhaustion of our limited domestic supply. For example, it is hardly conducive to a policy of conservation of natural resources to levy an import duty on manganese of which there is an extremely limited supply in this country.

Protection as a Means of Preventing Overspecialization. Sometimes a policy of protection is advocated on the ground that it will lead to a greater diversity in economic activities, and so prevent a dangerous con-

centration in a few lines of production. Thus, if a nation specializes in the production of a few agricultural commodities, sudden changes in the world demand for these products, or sudden declines in their prices relative to the prices of imported industrial products, may result in acute economic distress. Conversely, if a nation specializes in manufacturing, it may experience severe unemployment in world-wide business depressions. Consequently, it is claimed that it is better to aim at a balanced economy in which fluctuations may, at least to some degree, offset themselves. This may be true to some extent in economic fluctuations of a moderate sort, but severe depressions, such as that occurring in the early 1930's probably affect nations with a diversified economic development as much as those with a more specialized economy. Certainly the United States, with one of the most nearly balanced economies in the world, suffered at least as much from the depression as agricultural nations like Argentina or Australia, or relatively more industrialized nations like the United Kingdom.

Other factors doubtless explain this in part, but at least it can be said that a balanced economy is no guarantee against extreme fluctuations in prices and economic activity. Moreover, while large countries such as the United States might be able to bear the costs of maintaining a more diversified economy than might result under conditions of *laissez faire*, particularly since they would have a fairly widely diversified economy in any event, the cost of diversification in smaller countries, with a marked comparative advantage in a few lines,

might well exceed any potential gain in stability. Thus, it is by no means certain that Cuba would be better off economically if it used protective tariffs to reduce its intensive specialization in sugar.

Protection against Dumping. "Dumping" is a term applied to price discrimination between national markets, and the main objection to it, from an economic point of view, is that it often represents unfair competition by monopolistic enterprises. One of its most frequent manifestations is the selling of commodities abroad at a price lower than that charged in the domestic market. Under conditions of monopoly or monopolistic competition, producers may charge a monopoly price in their domestic market and sell at a competitive price in foreign markets. To do this successfully there must usually be tariff protection in the domestic market, otherwise domestic consumers would import the commodity from abroad rather than pay the higher domestic price.

If countries could count on getting dumped commodities at permanently lower prices than would be charged if they produced the commodities themselves, there would be little economic objection to dumping; in fact, they would gain as a result of being able to import commodities at such low prices. However, once competition has been eliminated by dumping tactics, the price may be raised to monopolistic levels, providing that the threat of further competition is sufficient to prevent a revival of competitive production of the commodity.

Moreover, much dumping is of a temporary or sporadic type designed to dispose of temporary over-

stocks, without the necessity of lowering prices in the domestic market. The disorganizing effect on the industries in the countries where commodities are dumped may thus offset any gain that may accrue to consumers from temporary bargain prices.

For these reasons it is generally conceded that temporary tariffs or administrative controls that are designed to prevent unfair competition of this type are economically justifiable. In other words, there is every bit as much reason to prevent unfair competitive tactics of this kind on an international scale as there is to prevent discriminatory price tactics by domestic monopolies. It must be kept in mind, however, that dumping involves price discrimination, and that the mere fact that foreign producers can undersell domestic producers in some lines is not evidence of dumping. If there is no discrimination between national markets, there is no reason to prevent price competition by foreign producers.

Antidumping legislation is difficult to apply because the evidence of dumping is ordinarily hard to obtain. This sometimes results in unjustly applying penalty measures to foreign exporters who are underselling domestic producers as a result of superior efficiency. Finally, a policy of preventing dumping does not justify the maintenance of high protective tariffs in general and at all times, but only the temporary imposition of antidumping duties.

National Self-Sufficiency and a Controlled Economy.

In recent years an increasing number of people have reached the conclusion that free competition is no longer a satisfactory regulator of economic life. Many believe

that unregulated competition is self-destroying and leads to monopoly, or a state of monopolistic competition, in which prices are rigidly controlled rather than left free to fluctuate. It is argued that modern methods of production, with their huge investments and fixed costs, tend to make the economic system rigid and resistant to change. Again, it is pointed out that in some countries powerful labor organizations attempt to freeze existing wage rates and prevent any downward adjustment of monetary wages. Moreover, it is claimed that in the modern economy, with its huge fixed debts, price declines result in acute economic distress. In general, it is argued that what the modern economic system needs is stability. Because of the inflexibility and the extreme interdependence of the modern economic system, it is asserted that any shock to the system is likely to result in a serious depression, unemployment, and extreme unbalance.

For these reasons many people have reached the conclusion that the future must witness an increasing control of economic life by the government, with the primary objective of increasing economic stability and security, even at the cost of some sacrifice in productivity. It is believed by many that the state must exercise an increasing control over prices and production and must guide the economic system by conscious plan, rather than by leaving the regulation to competition and free enterprise. It is further contended that to allow freedom of international trade would defeat any program of planning and control, and therefore that foreign trade, as well as domestic, must be controlled. Indeed, some go

so far as to state that the more self-sufficient a nation can become, the better is the chance that the controlled economy will provide the greater security and stability that are its primary objectives, since a nation can never hope to control its foreign trade as completely and successfully as its domestic trade, over which it can exercise absolute political control.

These views, it is apparent, are an indictment of the system of private capitalism, and only indirectly an indictment of freedom of international trade. Whether or not one believes that a planned economy will be more successful than a competitive economy depends very largely on one's economic and social philosophy. It is quite true that a completely planned economy will necessitate control of international trade as well as domestic trade.

In Russia, for example, both export and import trade are rigidly controlled by the government. Similarly, fascist countries such as Italy and Germany have exercised an increasingly stringent control over international trade. Moreover, each of these three countries is avowedly aiming at a high degree of self-sufficiency. Germany, in particular, boasts that in a few years she will be entirely self-sufficient as to food and essential raw materials. Italy has become largely self-sufficient in wheat, though at the economic cost of much higher prices for wheat than would prevail if it were imported.

But it is by no means certain that any of these countries in the near future will be able to sever absolutely all economic connection with the outside world, and probably none of them wishes to carry a policy of self-

sufficiency to such an extreme. They can minimize foreign trade but not eliminate it entirely. It is suspected by many that the decline in Germany's foreign trade is not altogether to her liking and far from voluntary on her part. To no small degree, the decline in Germany's foreign trade is a consequence of a rigid policy of exchange control that has decreased both her ability to export and her ability to import.³ Complete autarchy, under modern industrial conditions, is largely an illusion, although attempts to attain it may greatly reduce the volume of a country's foreign trade and inevitably necessitate an increasingly strict governmental control of foreign trade and, in all probability, of domestic trade as well.

It is very much to be doubted that many of those Americans who clamor for a policy of self-sufficiency, or who advocate the minimization of our foreign trade by prohibitive tariff duties, are really very sympathetic to an increasing control of economic life by the government, so far as domestic economic activities are concerned. They strongly favor governmental interference to prevent imports, but for the most part they would be outraged by what they would consider unwarranted governmental interferences with business in the domestic sphere, if a controlled economy were seriously attempted.

Yet the gain in economic security and stability that would accrue from a policy of self-sufficiency, which was at the same time accompanied by a policy of *laissez faire*

³ In addition, the Jewish boycott may have reduced German exports to some degree. How much is uncertain.

in domestic economic life, would probably not be very significant — certainly not great enough to justify the economic cost of a policy of isolation. Depressions are the resultant of domestic as well as international maladjustments. In a country as large as the United States, and with the high degree of specialization and economic interdependence that would prevail even if it were self-sufficient, economic fluctuations would probably be about as violent whether the nation were self-sufficient or not. If the collapse of international trade has intensified some depressions, a sustained foreign market has cushioned the shock in others, or has been a factor of importance in promoting recovery.

It may well be that a large degree of instability is inherent in the modern capitalistic economy, and that about all that can be done within the framework of such an economic system is to ameliorate the effects of instability by a broad program of social legislation such as unemployment insurance. Another line of attack might be a more thoroughgoing governmental control of the monetary and banking system. Measures along these lines might easily contribute more to the solution of the problems of economic instability than a policy of economic nationalism. But measures of this kind are far more likely to be violently opposed by American advocates of economic nationalism than favored by them. Strong advocates of unemployment insurance are rarely found in the ranks of the arch-protectionists.

Nor can the protective tariff of the United States

by any stretch of the imagination be considered a notable achievement of economic planning. It has, on the contrary, represented a welter of conflicting objectives, and a planless granting of favors to special groups with little or no consideration of the total effect on the economic life of the country as a whole. The tariff might conceivably be used as an instrument of control in a planned economy; but it would be a far different tariff from that which we have today, and the political machinery for determining tariff rates would be vastly different from that which is used at present.

It should be clearly understood that any further movement of the United States toward economic nationalism and self-sufficiency would result in a far greater degree of governmental control of economic life than most Americans would be willing to accept, least of all our ardent advocates of high tariffs. Economic nationalists are fond of pointing out that we exported only about ten per cent of the goods we produced in 1929, and that this ratio fell as low as six per cent during the depression of the early 1930's.

But these figures tend to obscure the economic difficulties that would be involved in readjusting our economy to a self-sufficient basis. In recent years we have exported forty per cent of our refined copper, twenty-seven per cent of our agricultural machinery, sixteen per cent of our industrial machinery, sixty-six per cent of our cotton, forty per cent of our tobacco, and twenty-eight per cent of our canned fruit. The ratio of exports to total production in many other specific industries also is high. Hence any further reduction of our

international trade would find us with badly over-expanded industries in many important lines of production, and labor and capital would have to be shifted from these lines to others. The difficulties of such a transition would almost inevitably necessitate, at least for a number of years, direct governmental action to relieve unemployment and to attempt to establish a new balance in our economy.

In regard to the difficulties of such a readjustment, Secretary of Agriculture Wallace has said:⁴

"If we finally go all the way toward nationalism, it may be necessary to have compulsory control of marketing, licensing of plowed land, and base and surplus quotas for every farmer for every product for each month in the year. We may have to have government control of all surpluses, and a far greater degree of public ownership than we have now. It may be necessary to make a public utility out of agriculture and apply to it a combination of an Esch-Cummins Act and an Adamson Act. Every plowed field would have its permit sticking up on its post. . . . Frankly I do not think we should go this far until we have had a chance to debate all of the issues with the utmost thoroughness. . . ."

But even after the transition to a more complete state of self-sufficiency had been effected, there would be a continuing cost in the decreased productivity that would result from the less effective use of our labor and resources. Moreover, we would undoubtedly have lost a large part of our huge foreign investments in the

⁴ *America Must Choose*, World Affairs Pamphlets No. 3, Foreign Policy Association (New York, 1934), p. 11

process, since we would have deprived our foreign debtors of the means of repaying us.

It may, of course, be argued that a planned economy need not necessarily imply a policy of autarchy, or even a very great reduction in the total amount of foreign trade; the government might merely try to control foreign trade with an eye to increasing stability in the national economy as a whole. But any attempt to stimulate a depressed domestic economy by forcing an increase in exports may meet with opposition from other countries which may be attempting to stabilize their domestic economies by reducing imports. Similarly, attempts to correct unemployment in certain lines by reducing imports may result in a curtailment of employment in other lines by causing foreign nations to undertake retaliatory action against exports.

The prospect of the international trade of the world rigidly controlled by individual nations, each with an eye to foisting burdens of economic readjustment on foreign nations, is not a particularly hopeful picture. This is precisely what happened during the 1930-1933 depression, and a tremendous reduction in world trade, the generation of international ill will, and a retardation of general economic recovery were the results.

Effective control of international trade, without a serious diminution of its volume, is probably contingent on a degree of international co-operation that is quite impossible under present political conditions. In the absence of this co-operation a policy of less governmental interference with international trade has much to recommend it. If the system of competitive capi-

talism is to be abandoned, in favor of a controlled economy with rigid control of foreign trade by nationalistic states, the result will probably be a reduction in the volume of foreign trade that will constitute a heavy economic cost in proportion to the gain in stability.

*ALLEGED POLITICAL AND SOCIAL
ADVANTAGES OF PROTECTION*

Many of the arguments for protection, or for a high degree of self-sufficiency, involve the claim that the economic costs of such a policy are more than compensated by social or political advantages. It is conceded that the specialization that would take place under free trade is economically advantageous; but it is contended that this advantage should sometimes be sacrificed to further the attainment of certain political or social objectives. The weight that is assigned to these arguments depends entirely upon one's scale of values. There is no objective standard that will provide a definitive answer, since the alleged costs and gains cannot be weighed in the same scale. Only three of these political and social arguments will be considered: (1) military self-sufficiency; (2) the claim that foreign trade leads to war; (3) the claim that a diversified economic life has certain social advantages.

Military Self-Sufficiency. This argument is one of the favorites of protectionists, and is undoubtedly of great importance in the determination of international commercial policy. In brief, it rests on the assumption that a policy of free trade would result in the dependence of the nation on foreign imports of many of the prod-

ucts that are vital to military strength. In case of war the nation might be blockaded and deprived of these vital products with fatal consequences. Accordingly, it is argued that, either by tariffs or bounties, each nation should provide itself with those industries that are essential to national defense in case it does not possess a comparative advantage in those lines. The military self-sufficiency argument has had a great deal to do with the resort to high protective tariffs in the post-war world. Specifically, it is an important factor in the desire for greater self-sufficiency in Germany, Italy, and Russia. The extreme suffering of Germany as a result of the Allied blockade has not been forgotten, and is perhaps the chief reason that Germany is bending every effort to become self-sufficient in food. Many of the smaller nations of central Europe have also been influenced by considerations of military necessity in determining their commercial policies.

Unquestionably, from the military point of view, there is merit in the attempt to assure a supply of war materials by a policy of protection. The difficulty is in knowing where to draw the line. Warfare has ceased to become a combat of small professional armies, and now involves whole populations in a struggle in which economic and industrial power may be decisive. Consequently, carried to its logical conclusions, an argument for military self-sufficiency means that all nations must be able to produce not only armaments and munitions, but the raw materials essential to these, and a necessary minimum of food and clothing as well. Each country must be able to produce munitions, air-

craft, tanks, heavy artillery, motor vehicles, chemicals, as well as sufficient food and clothing to sustain both its civilian population and armed forces.

In other words, since modern warfare is part and parcel of the complexity of modern industrial life, almost complete autarchy would seem to be necessary to assure military self-sufficiency. Predominantly agricultural nations would have to foster industry, and predominantly industrial nations would have to foster agriculture. But, as has already been stated, no nation can be entirely self-sufficient as to essential raw materials. For this reason complete military self-sufficiency is perhaps not attainable. How far nations shall go, in attempting it, becomes largely a question of assessing the advantages and disadvantages involved in such a policy. On the one hand, there is the loss in economic strength and productivity involved in subsidizing industries in which a nation does not have a comparative advantage and, on the other hand, the usefulness of these industries in time of war.

Clearly many countries cannot hope to be very successful in building up heavy industries, or in establishing factories for the production of aircraft and motor vehicles which require mass production. On the other hand, while military self-sufficiency might justify some subsidization of agriculture in industrialized countries, the increased cost of food and agricultural raw materials provides a very real check to the extent to which this is possible. A nation may easily push such policies too far. A policy of freer trade may result in such an increase in population and economic power that a

nation may be stronger in a military sense than would be the case if it were more self-sufficient. Thus, Great Britain would be a much weaker country from the military point of view if she had tried to remain self-sufficient as to food and raw materials. Specialization has given her the economic strength to support one of the strongest navies and air forces in the world.

Self-sufficiency to Avoid War. In the United States, in recent years, there has been some advocacy of a policy of reducing foreign trade to a minimum, on the ground that foreign trade is likely to involve the nation in war. It is pointed out that foreign trade may lead to bitter competition between the nationals of different countries, and that the competitive struggle may soon pass beyond the economic sphere into the use of armed force. Exporters will call on their own nation to use its prestige or power politics to obtain special trading advantages, or to resist the obtaining of special favors or concessions by foreign competitors. These rivalries may be particularly acute where each of several nations is aiming at establishing political control over backward nations, or attempting to prevent others from doing so. Similarly, the use of armed force or the display of force to protect foreign investments may increase the chance of war. Another aspect of this problem is the difficulty of maintaining so-called neutral rights to trade with belligerent nations during a war without becoming a party to the hostilities. A case in point is the friction between the United States and Great Britain during the early years of the World War, and the eventual declaration

of war against Germany by the United States because of incidents arising from the submarine blockade.

Very few people would argue that foreign trade is worth a major war, but it is not at all certain that foreign trade itself can be considered a fundamental cause of war. To attempt to dispense with foreign trade altogether because certain policies with respect to foreign trade increase the dangers of war is very much like throwing out the baby with the bath water. That foreign trade is possible without concomitant political policies that lead to war is suggested by the long record of freedom from war of the Scandinavian countries and Holland. These countries are active in foreign trade, but they find it possible to be so without going to war about it. Perhaps it is better insurance for peace to abandon the policies that make for war instead of abandoning foreign trade. The cause of peace may possibly be better furthered by continuing the effort to develop the machinery for the peaceful settlement of international disputes.

Moreover, it may be that in course of time a somewhat saner conception of national interest may be developed. It might be that it would be to the interest of certain groups for the United States to maintain the "open door" in China at the cost of war with Japan. It would be most difficult, however, to prove that it would be to the *national* interest to engage in a war costing billions of dollars and thousands of lives to protect our relatively small trade with China, and investments in that country. Unfortunately, it has

sometimes been all too easy for certain groups to convince the government and people that rather narrow group interests are identical with the national interest. It may be hoped that such will not always be the case. If there are sufficient advantages in trade, it will undoubtedly develop and continue without the necessity of using force. If the real aim is to increase foreign trade, it can best be done by removing trade barriers in the form of tariffs. Our export trade is reduced far more by our own tariff than it would be by the closing of the open door in China.

As has been mentioned in the discussion of free trade, any move toward general autarchy is itself a danger to international peace in that it may deprive many nations of essential products except as they can obtain them by conquest. Moreover, it is usually true that intense economic nationalism goes hand in hand with aggressive political nationalism and militarism. On balance, therefore, it is difficult to believe that the cause of world peace will be much furthered by policies inclining toward autarchy. But it must be conceded that there is much to be said in favor of a neutral country embargoing trade with, and particularly loans to, belligerent nations, unless the neutral nation has sufficient national political interests at stake to be willing to risk war. Although the recent neutrality legislation of the United States has been violently criticized as well as strongly defended, it would appear to be a step in the right direction if the primary national interest is to keep the United States out of war. Neutral rights to trade are hardly worth a war.

Alleged Social Advantages of Protection. Many of those who admit the economic advantages of free trade and specialization contend that a policy of protection is sometimes preferable for social reasons. Thus a policy of free trade might result in the reduction of agriculture to a subordinate position because a nation did not have a comparative advantage in agriculture. This, it is argued, would have bad social consequences. A large number of independent farmers working and owning their own farms are claimed to be a particularly valuable social asset to the community. They are said to provide a class of stable and conservative citizenry that will resist violent social or political change, and leaven the moral life of the nation by the virtues that are supposed to be fostered in the simple bucolic life.

On the other hand, industrialization is pictured as a social blight bringing a large proletarian class, and urbanization with crowded slums, and all the other less pleasing manifestations of modern industrial life. Accordingly, it is argued that there is a great social advantage in keeping agriculture the backbone of the nation and in preventing overindustrialization. It is quite unlikely that these arguments will, at present, receive much consideration in determining commercial policy, although the agrarian class is sometimes politically powerful enough to obtain protection.

Another argument sometimes advanced is that protection should be used to correct the uneven distribution of income that has so far characterized the modern industrial economy. In other words, protection is ad-

vocated to alter the shares in the distribution of income, even at the expense of decreasing the total income to be distributed. Thus, protective tariffs levied on imports that embody a relatively large amount of labor as compared to capital may increase the relative demand for labor and alter in its favor the share of the national income received by that class. Whether labor's share would be absolutely larger is not at all certain. If the policy were carried to very great lengths the resulting reduction in productivity would, in all probability, preclude any increase in the real income of labor.

Sometimes it is contended that it would be to the advantage of labor for the government to prevent the export of capital. This contention assumes that the result of such a policy would force down interest rates and increase the relative share of income going to labor. Similarly, low rates of interest might make possible many socially desirable projects such as low-cost housing. Whether labor would gain in the long run from a policy of restricting capital exports is highly uncertain. There is a possibility that a decline in the rate of interest might lead to a reduction of saving and a consequent rise in the rate of interest to the levels that previously prevailed.

Again, labor in the capital-exporting countries has enjoyed some indirect gain when foreign investments have been of such a nature as to increase the productivity of borrowing countries. Such loans have increased the quantity of products available for consumption and have thus increased real incomes in both the creditor and debtor nations. Thus, the British capital that

poured into this country during the last century, for the building of American railroads, was a very important factor in lowering the cost of food in England. Finally, if it is an objective of social policy to increase the relative share of income going to labor, this may be accomplished far more effectively by direct action than by indirect methods such as tariffs or an embargo on foreign loans. For example, the nation might resort to steeply progressive income and inheritance taxes and use the proceeds for social insurance or low-cost housing developments.

NONRATIONAL ARGUMENTS FOR PROTECTION

These arguments are encountered most frequently in political platforms and orations, and in "man in the street" economics. Some of these arguments have been dealt with by implication in the discussion of international trade theory, and in the analysis of the tariff as an implement of control in commercial policy, and will not be treated in detail. For the most part, they are crude mercantilistic fallacies, which, so far as scientific thought on the subject is concerned, have long ago received a deserved interment. An example of arguments of this kind is the claim that the profit from foreign trade consists of selling more abroad than is purchased, with the result that there is a steady influx of gold. Accordingly, it is said that we should sell abroad, but use the tariff to prevent imports. As has been pointed out, this view not only indicates a complete misunderstanding of the nature of the economic advantage of

foreign trade, but of its monetary mechanism as well.

Another example is the belief that foreign trade is for the purpose of disposing of "surpluses", and that while it is fine for us to get rid of our "surpluses", those of foreigners should be excluded from the domestic market. This view completely overlooks the point that specialization inevitably involves producing more of some commodities than are consumed domestically, and that these exports are not the casual by-products of a failure to guess the consuming capacity of the domestic market. There is much plant capacity in this country that was deliberately and consciously planned to serve the foreign market as a natural consequence of geographical specialization. A nation no more exports "surpluses" than the grocer sells "surplus" groceries as a result of miscalculating his individual needs.

Still another fallacy is that imports should be excluded by tariffs because they "send money abroad which should have been kept at home." This fallacy ignores the fact that imports are paid for by giving foreigners purchasing power in this country, and that the spending of this purchasing power results in the export of goods and services to pay for imports. This fallacy is closely akin to the wholly fictitious remark attributed to Abraham Lincoln to the effect that when an American buys goods from an American we have both the money and the goods, but that when an American buys goods from a foreigner the foreigner has the money and we have the goods.

The Pauper-Labor Argument. Undoubtedly the fallacy that at the present time occupies the most important

place in winning the favor of the electorate for a policy of high tariffs is the so-called pauper-labor argument. This argument asserts that the United States has the highest wage level and the highest standard of living in the world, and that, in consequence, we must have a high tariff to defend the American wage worker against the competition of the low-wage labor of Europe and Asia. Were it not for the tariff, this argument continues, the United States would be inundated by an influx of products from low-wage countries that would be able to undersell us in practically everything and thus throw American wage earners out of jobs until our wage level had been driven down to that of the "coolie" labor of Asia or the "sweated" labor of Europe.

Belief in this argument is entertained with an almost religious piety by perhaps a majority of the American public, but it is, nevertheless, wholly erroneous. Inasmuch as the pauper-labor argument involves an almost complete misunderstanding of the economics of international trade, the ability to see through this argument may perhaps be considered the *pons asinorum* of this field of study.

Aside from the theoretical errors involved in this argument, an appeal to obvious fact should do much to discredit it. To begin with, if the argument were true, how can it be possible for us to export? The United States is one of the greatest exporting nations in the world, and the diversity of its exports is amazing, consisting of a tremendous variety of raw materials, semi-manufactured, and manufactured products. Yet we sell these goods all over the world in competition with sim-

ilar articles produced by foreign "low-wage" labor, and do so at a profit. In many cases our products are sold abroad at a profit even in spite of substantial foreign tariff barriers. Producers of these exports are not protected by the American tariff when goods are sold in foreign markets, and our export industries pay the American scale of wages, but we can and do compete successfully in foreign markets. Indeed, low-wage foreign producers often ask tariff protection from the competition of efficient American industry. If we can meet foreign competition in many lines in foreign markets, we can certainly meet that competition in the domestic market.

One of the major fallacies involved in the pauper-labor argument is the erroneous assumption that high money wages necessarily mean high money costs of production and that low money wages necessarily mean low costs of production. But money costs of production are not determined by the money wage alone; they depend upon output per man-hour as well. Wages may be very high in this country, but if productivity is high the wage cost *per unit of product* may be quite low. Unit costs may be much lower than in Italy or Japan, where money wages are low but where productivity per man-hour is also relatively low. This is the reason why the United States with its high wage level is able to undersell Japan or Italy in some lines in spite of the much lower wage levels in those countries.

The standard of living of a country depends upon the per capita productivity of its people. If resources are

abundant and productive technique is efficient, the per capita productivity will be great and the standard of living will be high. In such a country the prices of internationally traded goods will be about the same as in other countries, but because of the high productivity of labor it will be possible to pay high wages relative to these prices. Real incomes will be high because of the fact that high wages relative to prices will mean that a large amount of goods can be obtained with these money incomes.

In contrast, in a country where money wages are low and productivity is low, the standard of living will also be low. Prices of internationally traded goods will be about the same as in the high-wage country, but money wages will be much lower. This means low real incomes for the people in the country of low productivity. The height of money wages in each of the two countries is not the cause of the high standard of living in the one and the low standard in the other; the money wages in the two countries are the *resultant* of their respective productive efficiencies. *Because* productivity is high, the one country can afford to pay high wages; *because* productivity is low in the other, only low wages can be paid.

But as has been seen, countries are not equally efficient in all industries. They are comparatively more efficient in some than in others, or, as previously stated, each has a comparative advantage in some lines of production. It is the productivity in industries possessing a comparative advantage that determines what the general level of money wages of a country will be, given

the world price level of internationally traded goods. Wages for a given grade and type of labor in these industries will set a standard that other industries are forced to meet if they are to obtain workers of this class.

In other words, the general level of wages for workers of different grades in the United States is set by what workers can earn in mass-production industries such as the manufacture of automobiles, machinery, and typewriters, or in the production of agricultural products that can be cultivated by extensive methods of farming. The general level of wages in this country is not set by what can be earned in specialty manufactures requiring a large amount of hand labor, or in the production of such commodities as sugar beets or raw silk. But, if enterprisers attempt to pay the relatively high money wages that can be earned in the first type of industry for the employment of labor in the second type, they will find that they cannot produce at a profit. Then the cry will be raised that they are being under-sold by cheap foreign labor.

As a matter of fact, however, it is the necessity of competing for labor with enterprisers in comparative-advantage industries, as well as the competition of the foreign producers, that prevents the profitable use of labor in industries in which there is no comparative advantage. The differences in money wages between countries indicate that some will have a comparative advantage in some lines of industry, while other countries will have a comparative advantage in other lines. If the high-wage countries try to compete in lines in

which the low-wage countries have the comparative advantage they will always find that they are being undersold by "cheap labor." Conversely, the low-wage countries, no matter how low the general level of wages, will find that they cannot meet the competition of high-wage countries in some lines.

It is thus impossible for one country to undersell all others by lowering wages, or for a high-wage country to be undersold by other countries in all lines. There will always be differences in comparative efficiency in the production of different products, and if a nation engages in foreign trade at all it must be able to export as well as import. The manner in which these adjustments are effected has already been pointed out in the discussion of the monetary mechanism of international trade. Moreover, as has been mentioned previously in the discussion of tariffs, the prevention of imports necessarily involves a reduction of exports; and a tariff, to the extent that it is effective, simply raises prices of specific goods to a point where it is possible for producers in those lines to offer high enough wages to bid labor away from employment in industries of comparative advantage.⁵ It is clear, therefore, that instead of being a cause of our high standard of living, the tariff, to the extent that it has been effective, prevents that standard from being as high as it otherwise would be, since the tariff penalizes our industries of comparative advantage and thus reduces our per capita productivity.

No one would attempt to deny that a specific indus-

⁵ See above, pp. 213-220.

try may be benefited by a subsidy. American industries that are unable to meet foreign competition because they are not in a position of comparative advantage may benefit from a protective tariff. But this is an entirely different proposition from asserting that the tariff raises our standard of living. The cost of the benefit consists of a less productive use of labor and resources, with the result that real incomes are lower. Anyone, even without a broad comprehension of the working of the economic system, can easily observe the benefit to a specific industry that may result from the tariff; but the fact that the community as a whole must pay the costs of this subsidy is not so apparent to the uninformed.

It would have been a fine thing from the point of view of buggy manufacturers, for example, if a benevolent Uncle Sam had decided to subsidize them when their business declined as a result of the popularity of the automobile. Similarly, many skilled workers would have been delighted with a subsidy whenever a new machine was introduced. It is even conceivable that we might still be using hand methods of production if the people as a whole had wished to pay the price of subsidizing them so highly that the competition of newer methods of production could have been overcome. Such a policy might have prevented occasional hardship and maladjustment, but would anyone argue that the American standard of living had been protected and raised by such a policy?

There may be sound social reasons for measures to prevent changes from imposing undue hardship on cer-

tain economic classes but, if change is prevented altogether, there can be no improvement. Thus a strong case could be made for a system of unemployment insurance, vocational re-education, and government employment exchanges to prevent the maladjustments caused by new machine methods from working undue hardship on certain classes. These measures would also be an aid in mitigating the effects arising from a loss of comparative advantage or the reduction of tariffs. But, whereas measures of this kind would ease the pains of transition to a more efficient use of labor and resources, a prohibitive tariff operates to prevent entirely such an adjustment.

No one would advocate abolishing all of our tariffs overnight, because the temporary maladjustments might cause serious hardship. But this is far from admitting the validity of the pauper-labor argument. There is every reason to believe that the abolition of tariffs would increase our standard of living, but this improvement could be effected with far less social cost if the transition were made gradually.

THE PROBLEM OF REDUCING TARIFFS

It is very much to be doubted that the American tariff will ever be reduced significantly without a serious reform in the way tariff laws are made. So long as Congress determines actual rates, the pressure of local self-interest will probably prevent the framing of a

rational tariff policy. The experience of the United States has shown that once various economic interests have become accustomed to tariff favors, it is extremely difficult to secure the reduction of specific rates. At the same time, there has been increasing public dissatisfaction with our tariff policy.

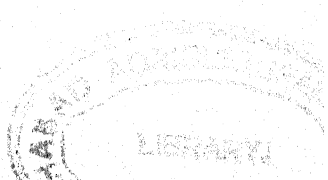
The Hawley-Smoot tariff of 1930 was one of the highest in history, and while it gratified many of those who enjoyed the protection on specific commodities, there was, none the less, a great deal of public criticism and protest. In part this came from certain groups like the farmers who had been given increased tariffs on agricultural products, but who found that their export markets were rapidly disappearing, while the fact that basic agricultural crops were on an export basis prevented them from realizing any appreciable advantage from the tariff on their products. Others were disturbed by the fact that the United States was now one of the great creditor nations of the world. As the United States was a creditor country, it ill became us to resist by higher tariffs an increase in imports arising from the payment of interest on our investments. For a while we maintained our exports by lavish lending abroad, but whenever these loans tapered off, there was a great influx of gold that was neither needed nor wanted by our banking and monetary authorities. On the contrary, the great influx of gold was subjecting the currency system of foreign countries to severe strain and making it increasingly difficult for them to maintain the gold standard. In addition, our tariff increase was accompanied by retaliatory tariffs and by a

world-wide movement toward more restrictive trade policies.

As the depression of the early 1930's deepened, it was seen that our extremely high tariff was not only failing to maintain prosperity, but that the general movement toward a more intense economic nationalism and protectionism was bidding fair to destroy international trade. As has been mentioned, the total foreign trade of the world decreased in value by two thirds between 1929 and 1934. But more serious, from the point of view of the United States, was the fact that our own foreign trade decreased by more than three fourths. Whereas our foreign trade had amounted to about fourteen per cent of total world trade in 1929, by 1934 our share of world trade was only 9.5 per cent. This was by no means wholly attributable to tariffs, but they were undoubtedly a major factor in both the decline of world trade and our own foreign trade. In any event, there have been signs of a revulsion against economic nationalism on the part of a great many people, and at the present time there seems to be developing a movement toward the reduction of trade barriers which is gaining increased headway.

THE TRADE AGREEMENTS ACT OF 1934

The United States has taken the initiative in this movement by negotiating a series of reciprocal trade agreements for the mutual reduction of tariff duties. On June 30, 1934, Congress enacted a law authorizing the President to negotiate such agreements, and conferring upon him the power to reduce individual tariff



duties by an amount not to exceed fifty per cent. Moreover, the Trade Agreements Act provides that any reductions of tariff duties thus made shall be applied not only to imports from the country signing an agreement, but to imports from all other countries as well, except that the President may refuse to extend the benefits of lowered duties to imports from those countries that in his opinion are discriminating against the commerce of the United States.

In other words, the intent of the law is to generalize reductions in duties. In negotiating agreements under this act it has been the policy of the administration to include an unconditional most favored nation clause. Such a clause means that the United States not only secures the benefits of the reduction in duties that a foreign nation makes as a bargaining *quid pro quo* in its trade agreement, but that in addition the United States shares in any subsequent reductions in tariffs that the foreign nation may grant to other foreign countries.

The Determination of Individual Duties. While the trade agreements program is essentially a bargaining device for securing tariff reductions, it is also of significance as a device that transfers some of the control over individual tariff duties from Congress to the President. It is true that the President cannot lower duties by more than fifty per cent, nor can he transfer commodities between the dutiable and free lists, but within these limits he can determine individual rates. As has previously been noted, the power of Congress to determine individual tariff duties is a serious bar to any rational protectionist policy because of the unavoidable

lobbying and logrolling that results. We can no more expect a sensible determination of tariff duties under such a system than we could anticipate a reasonable railroad rate structure if Congress and not the Interstate Commerce Commission had power over individual railroad rates. The present Trade Agreements Act mitigates to some degree a thoroughly unsound procedure. Through the medium of agreements, actual rates can be determined within the limits indicated without the consent of Congress.

Although interested parties are given an opportunity at public hearings to present their case, it is now possible to give some consideration to national advantage rather than parochial self-interest. In the negotiation of the new trade agreements the United States Tariff Commission serves as a fact-finding body, and decisions as to the reduction of duties are based on broad considerations of policy rather than, as in the past, on group pressure. There are many tariff duties that can be considerably lowered without involving a serious danger of even temporary maladjustment or unemployment, and in general a policy has been followed of avoiding decreases in duties that would subject industries long sheltered by the tariff to rapid extinction by foreign competition. But if we are to gain concessions from foreigners in order to enlarge our exports, we must also be willing to give something in return. If we wish to relieve the burden hitherto carried by our industries of comparative advantage, we cannot continue to protect the industries that have a disadvantage to the extreme degree that has been true in the past. The nature and

extent of the tariff reductions so far effected, however, would not appear to warrant a fear that the transition to a lower tariff is proceeding so rapidly as to constitute even a temporary threat to stability.

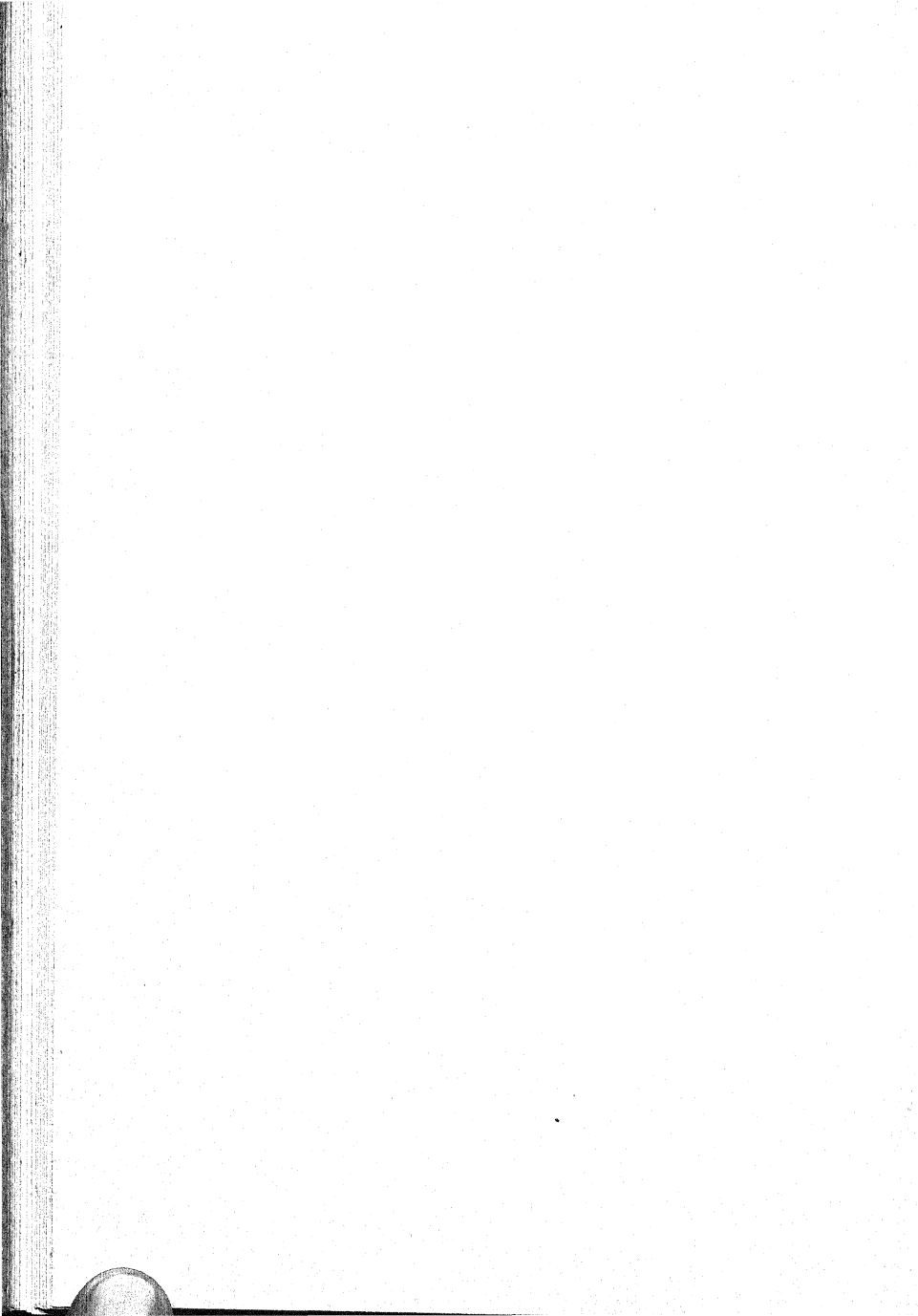
Progress of the Trade Agreements Program. By the end of 1937 trade agreements had been negotiated with seventeen foreign nations. These were Cuba, Brazil, Belgium, Haiti, Sweden, Colombia, Canada, Honduras, Netherlands, Switzerland, Nicaragua, Guatemala, France, Finland, Costa Rica, El Salvador, and Ecuador. In addition, negotiations for a trade agreement with Czechoslovakia had been started, and the State Department had issued preliminary announcements that negotiations with England, Turkey, and Venezuela were contemplated. The contemplated trade agreement between England and the United States was being widely discussed in both countries. Apparently the program has been so judiciously administered that it has received widespread approval from practical business men.⁶

A large percentage of the foreign trade of the United States is with the nations that have signed or entered into negotiations for trade agreements. The various agreements do not necessarily involve a reduction of duties on all the commodities exchanged between the parties to the agreement, and it is very easy to exaggerate the extent of the reductions effected. During the period of recovery following the 1930-1933 depression

⁶ Van Vlissingen, F. H. F., "The American Trade Agreements Program", *World Trade* (Journal of the International Chamber of Commerce), March-April, 1937, pp. 5-7. The program has also received the public endorsement of the United States Chamber of Commerce.

there was an increase in international trade and, as a consequence, an increase in the foreign trade of the United States. During the same period our foreign trade with nations that are parties to the new trade agreements increased more rapidly than our foreign trade with other nations. But regardless of immediate results, the program is significant as an indication of the willingness of many nations to halt and reverse the recent trend toward economic nationalism. A similar signpost pointing in this direction is the agreement for temporary stabilization of the exchange value of their currencies entered into by the United States, France, and the United Kingdom in October 1936. This agreement was accompanied by the abandonment by France of many of her rigid quota restrictions on imports.

There is thus evidence of a strong current toward greater freedom of international trade. But this should not be taken to mean that there will be a scrapping of protectionism overnight by nations that have long become accustomed to protective tariffs. Moreover, with the world-wide tendency toward the control of economic life by government, it is illusory to anticipate a return to as great a freedom of trade as prevailed in the pre-war period. The present trend might easily be halted by a change of administration in the United States, by the spread of fascism among South American countries, or by war. Nevertheless, by the end of 1937 there were indications of a recession from the extreme economic nationalism that prevailed during the early 1930's.



INDEX

- AFRICA, and population growth, 66; migratory movements to Asia and, 77-78; net European emigration to, 77-78
- Agrarian nations, and natural resources, 150-152; and international trade, 162-163
- Agricultural resources, 141-148; elasticity in the utilization of land and of, 142-143; contribution of science and invention to, 143-146; products from, in international trade, 146-148
- Argentina, immigration into, from 1860 to 1920, 76; and international trade, 165, 166
- Asia, and population growth, 66; migratory movements to Africa and, 77-78
- Australia, birth rate in, in 1931, 53; and the rate of natural increase in population, 66
- BALANCED ECONOMIES, and natural resources, 151-152; and international trade, 163; as an argument for protection, 242-244
- Belgium, and overpopulation, 80; and international trade, 165, 166
- Bills of exchange, and international trade, 176
- Birth control, views of Malthus on, 30-31, 33-34; and family limitation by means of volitional control, 55-56; fundamental motives of, 56-58; and Japan, 67; as a possible solution to population problem, 86-87
- Birth rate, differential between death rate and, accounts for annual population growth, 50; and table of crude yearly birth rates by periods, 51-53; period of decline in the, in various countries, 53-54; factors accounting for the decline in the, 54-58; and family limitation by means of volitional control, 55-56; and the fundamental motives of family limitation, 56-58; and the change in the status of women in the last century, 58; and decline in the rate of natural increase of population, 63-67; and age composition of the population, 67-69; of negroes in

- the United States, 95; of children of foreign-born parents in the United States, 97; decline in the United States of the crude, specific, and net reproduction, 114-116; differentials in the population of the United States, 116-118; the trend in the United States of the, 126-127
- Bounty, *see* subsidy
- CANADA, and the rate of natural increase in population, 66; immigration into, from 1903 to 1914, 76; immigration to United States from, 128-129; and international trade, 165, 166
- Capital, flow of, 10-12; migration of population and the flow of, 10, 11; hindrances to the flow of, 13; economic effects of exports of, invested in colonies, 84-85; movement of, in international trade, 167-173, 209; nature of the movement of, in international trade, 167-169; long-term, movements, 169-171; table of American private long-term investments of, in foreign countries, 170; movements of short-term investments of, 171-173; mobility of, in domestic and international trade, 180; and embargoes, 222-223; advantage to labor in prevention of export of, 260
- Carnegie Endowment and International Chamber of Commerce, joint Committee of, quoted, 16 *n.*
- Charles, E., quoted, 51 *n.*; cited, 143 *n.*
- Clark, G., cited, 76 *n.*, 78 *n.*
- Commercial policy, *see* international commercial policy
- Commercial treaties and agreements, in an international commercial policy, 225-228; *also see* Trade Agreements Act of 1934, most favored nation treaties
- Commodities, international economic relations and the movement of, in international trade, 162-167, 208-209; capital movements and the movement of, 167-169; tariff for revenue and importation of, 214-215; tariff for protection and importation of, 215-218
- Comparative advantage, and international trade, 183; an illustration of, 183-187; advantages of international trade to countries having a, in different commodities, 188-193; adjustment under gold-standard conditions leading to specialization in international trade along lines of, 194-200; 209-211; adjustment under inconvertible paper money standards leading to specialization along lines of, 200-206; changes in, 209-211; and the tariff, 216-218; specializa-

- tion along lines of, the essence of the case for free trade, 230-232; and military self-sufficiency, 255-256; and the pauper-labor argument for protection, 265-267
- Condorcet, and William Godwin, 25
- Controlled economy, and national self-sufficiency, 245-253; and the protective tariff, 249-250
- Cultural-intellectual development, tests of, 119; regional variations in the levels of, 119-121; variations in the levels of, among social classes, 121-122
- DEATH RATE, decline in the, 58-60; factors accounting for fall in the, 60-63; and reduction in infant mortality, 60-62; and Industrial Revolution, 62-63; and decline in the rate of natural increase of population, 63-67; of negroes in the United States, 95; of foreign-born element in the United States, 96-97; decline in the United States of the crude, 123-124; decline in the United States of specific, 124-125; trend in the United States of the, 126-127
- Direct investments, 169-170
- Domestic trade, similarity of foreign and, 174-178; differences between foreign and, 178-180; adjustment of costs in, 181; gain from international trade analagous to gain from, 189-190
- Dublin, L. I., cited, 49 *n.*, 72 *n.*
- Dublin, L. I., and Lotka, A. J., quoted, 49 *n.*
- Dumping, definition of, 244; protection against, 244-245
- Duties; *see* tariff
- ECONOMIC INTERDEPENDENCE OF NATIONS, 3-6, 157-158; and the forces of nationalism, 4-6
- Economic relations, international, *see* international economic relations
- Economic welfare, and optimum theories, 36-42
- Embargoes, and international commercial policy, 222-223
- England, birth rate in, in 1931, 53; and the death rate, 59; rates of natural increase in population in, 65; birth rate in Sweden compared with birth rate in, 68; and mineral resources, 156, 157; importance of international trade to, after the Industrial Revolution, 163-164, 165, 166, 167
- England and Wales, and rapidity of population growth after Industrial Revolution, 49; reduction in infant mortality in, 61; 1933 net reproduction rate in, 70
- English Poor Laws, denounced by Malthus, 33

- Europe, and migration, 75-78, 81-82
- Exchange rates, and international trade under inconvertible paper money standards, 200-206
- Exploitation, defined as an economic term, 149
- Exports, and international trade, 176-177, 178, 206-207; and imports in international trade under gold-standard conditions, 195-200; and imports in international trade under inconvertible paper money standards, 202-206; change in comparative advantage and Japanese, 211; and a tariff, 213-220; and embargoes, 222-223; and exchange quotas, 223-225; and commercial treaties and agreements, 226-228; and specialization along lines of comparative advantage, 230; and infant industries, 239-240; and conservation of natural resources, 241-242; in 1929 and 1930 in the United States, and national self-sufficiency, 250-251; fallacies concerning, 261-262; and the pauper-labor argument for protection, 263-264
- FERENCZI, Imre, 76 *n.*
- Fertility, one of two factors limiting the power of multiplication of the human species, 47; and gross reproduction rate, 69-70; and net reproduction rate, 70; rural-urban differential of, 116-118; and regional variations in cultural-intellectual levels, 119-121; and social status, 121-122; decline in American, 126; *also see* birth rate
- Fields, J. A., quoted, 26 *n.*
- Foreign-born element in the United States, growth and distribution of, 96-97
- Foreign Trade, table of countries with the largest, in 1929 and 1934, 165; table of percentage distribution by continental groups of the trade of countries with the largest, 166; *also see* international trade
- France, birth rate of, in 1931, 53; reduction in infant mortality in, 61; and gain in number of children surviving to age of ten, 61; rates of natural increase in population in, 65-66; net reproduction rate in, in 1933, 70; and mineral resources, 156; and international trade, 165, 166
- Free trade, an international commercial policy, 212-213; arguments for a commercial policy of, 230-236; specialization along lines of comparative advantage, a major argument for, 230-232; and a minimum of governmental intervention, 231-232; corrupting influence of bounties

- or tariffs another argument for, 232-233; and the anti-monopoly argument, 233-234; and foreign competition, 234; and international peace, 234-236, 258; and military self-sufficiency, 253-256
- GERMANY, birth rate in, in 1931, 53; reduction in infant mortality in, 61; and gain in number of children surviving to ten years of age, 61; and net reproduction rate in 1933, 70; and overpopulation, 80; and mineral resources, 156, 157; and international trade, 164, 165, 166, 167; and exchange quotas, 224; and a policy of national self-sufficiency, 247-248; and military self-sufficiency, 254
- Godwin, William, creed of, 25
- Gold, and international trade, 176-177, 194-200
- Gold standard, the mechanism of adjustment in international trade under the, 200-206
- Graham, F. D., cited, 240 *n.*
- HAWLEY-SMOOT TARIFF, and international ill will, 236, 270-271
- IMMIGRATION, the volume of, 127-129; restriction policy of the United States Government on, 128-129; annual natural increase of population growth and net, 129-131; *also see* migration
- Immigration Restriction Act of 1924, 128
- Imports, and international trade, 176-177, 178, 206-207; and exports in international trade under gold-standard conditions, 195-200; and exports in international trade under inconvertible paper money standards, 202-206; and a tariff, 213-220; and embargoes, 222; quotas on, of goods, 223; and exchange quotas, 223-225; and miscellaneous administrative controls, 225; and commercial treaties and agreements, 225-228; and conservation of natural resources, 241-242; fallacies concerning, 261-262; and the Trade Agreements Act of 1934, 271-275
- Inconvertible paper money standard, mechanism of adjustment in international trade under the, 200-206
- Industrial countries, and natural resources, 151-152; minerals essential to, 154-155; and international trade, 163-167; and the export of capital, 170-171
- Industrial Revolution, relative importance of resources changed by, 8; followed by the "Age of Invention", 44;

- slow rate of population growth prior to, 46-48; phenomenal rate of population growth after, 49-50; decline in death rate after, 59-60, 62-63; and exploitation of mineral resources, 149; effect of, on international trade, 163-164
- Infant industries, and protection, 237-240
- International commercial policy, instruments of, 212-228; one of economic internationalism or of economic nationalism, 212-213; a tariff for revenue in an, 213-215; a tariff for protection in an, 215-220; direct subsidies or bounties in an, 220-222; embargoes and quotas as implements of control in an, 222-225; miscellaneous administrative controls in an, 225; commercial treaties and agreements as controls in an, 225-228; and arguments for a commercial policy of free trade, 230-236; and arguments for protection and national self-sufficiency, 236-269; and military self-sufficiency, 253-256; and the reduction of tariffs, 269-275; and the Trade Agreements Act of 1934, 271-275
- International economic relations, the nature of, 161-173; and the movement of commodities in international trade, 162-167; and the movement of capital in international trade, 167-173; and the furnishing of services by citizens of one country to those of another, 173; and immigration and emigration, 173
- International trade, movement of commodities in, 14-19, 162-167; changing character of, 18-19; a substitute for migration, 89-90; agricultural commodities in, 146-148; and agrarian countries, 162-163; and industrial countries, 163-167; table of countries with the largest, in 1929 and 1934, 165; table of percentage distribution of, in 1934, 166; movement of capital in, 167-173; theory of, 174-193; comparison between domestic and, 174-180; and monetary mechanism, 178-179; and immobility of factors of production, 179; mobility of labor and capital in domestic and, 179-180; bases of, 180-183; adjustment of prices and costs of production in, 182-183; and comparative advantage in production, 183-187; advantages of, 188-193; and the ratio of interchange, 192-193; monetary adjustments in, 194-211; between two gold-standard countries, 194-200; under inconvertible paper money standards, 200-206;

- arguments for a commercial policy of free, 230-236; international peace and free, 234-236; arguments for protection and national self-sufficiency in, 236-269; and infant industries, 237-240; and conservation of natural resources, 240-242; and protection as a means of overspecialization, 242-244; dumping in, 244-245; and a policy of national self-sufficiency, 245-253; and alleged political and social advantages of protection, 253-261; reduction of, to avoid war, 256-258; and pauper-labor argument for protection, 262-269; and tariff reduction, 269-275; and Hawley-Smoot tariff of 1930, 270-271; and Trade Agreements Act of 1934, 271-275; trend toward greater freedom of, 275
- Italy, birth rate in, in 1931, 53; and overpopulation, 80; and mineral resources, 156; and international trade, 165, 166; and a policy of national self-sufficiency, 247-248; and military self-sufficiency, 254
- JAPAN, and the rate of natural increase in population, 66-67; and overpopulation, 80; development of the secondary industries in, a possible solution to strain of population pressure, 89; and mineral resources, 156; and international trade, 165, 166
- KUCZYNSKI, R. R., cited, 69 n., 71 n.
- LABOR, tariff and the employment of, 218-220; free trade *versus* the uneconomic use of, 231-232; alleged social advantage of protection to, 259-261; the pauper-, argument for protection, 262-269; *also see* migration, population
- League of Nations, estimates of international trade by the, 162; Economic Intelligence Service, quoted, 210 n.; and lowering of trade barriers, 235
- Leith, C. K., cited, 154 n., 155 n., 157 n.
- Linked-purchase agreements, 223; *also see* Trade Agreements Act of 1934; commercial treaties and agreements
- London, death rates in, before and after the Industrial Revolution, 59-60
- Long-term investments, 169-171; table of American, in foreign countries, estimated as of the end of 1936, 170; of foreigners in the United States at the end of 1936, 170
- Lorimer, Frank, and Osborn, Frederick, quoted, 116 n., 117 n., 120 n.; cited, 119 n., 135 n.

- Luthringer, G. F., Chandler, L. V., and Cline, D. C., cited, 171 *n.*, 176 *n.*
- MALTHUS, THOMAS R., and the study of population, 24-25; statement and interpretation of doctrine of, 26-36; principle of population of, 26-27; relation of population to food supply expressed in geometric and arithmetical ratios by, 27-28; criticism of geometric ratio stated by, 28-29; criticism of arithmetical ratio expressed by, 29-30; preventive check on growth of population advocated by, 30-31; positive checks to population growth and the doctrine of, 31-32; ineffectiveness of preventive check advocated by, 32; social theory of, 33-34; pattern of population growth of, 34-36; rate of population growth after Industrial Revolution and doctrine of, 49-50; and preventive check on population increase, 56; and change in the status of women, 58; criticism of doctrine of, of the relation of subsistence to population growth, 142-143; and international trade, 146-148
- Massachusetts, death rates in, 123-125
- McIsaac, A. M., and Smith, J. G., cited, 11 *n.*, 181 *n.*, 195 *n.*
- Mean length of life, the, 64
- Mexico, immigration to United States from, 128-129
- Migration, volume of, 75; and distribution of population, 76-78; in temperate zone, 76-77; to Asia and Africa, 77-78; character of recent European, 78; and fallacy of colonial expansion, 80-82; and imperialistic expansion, 82-83; into empty lands, 83-84; and present immigration restrictions, 85-86; *also see* immigration
- Military self-sufficiency, and protection, 253-256
- Mineral resources, 148-157; exploitation of, 149-150; national development and, 150-152; distribution of world, 152-157; essential to industrial power, 154-155; position of nations with respect to, 155-156; regional concentration of, 156-157
- Monetary profits, the motivation of international trade, 175
- Monopoly, and a tariff, 216-217; free trade a corrective to the abuse of, 233-234; and dumping, 244-245
- Mortality, one of two factors limiting power of multiplication of human species, 47; reduction in infant, 60-62; and gross reproduction rate, 69-70; and net reproduction rate, 70; *also see* death rate
- Most favored nation treaties,

- unconditional and conditional, 226-228, 272; *also see* Trade Agreements Act of 1934
- NATIONAL SELF-SUFFICIENCY, an international commercial policy, 212-213; arguments for protection and, 236-269; and a controlled economy, 245-253; and depressions, 248-249; to avoid war, 256-258
- Native white population in the United States, distribution of the, 103-105
- Natural resources, disparity in the distribution of population and, 8-9; and population optimum, 37; and dynamic force of population, 44-46; agricultural, 140-148; elasticity in utilization of land and agricultural, 142-143; contribution of science and invention to agricultural, 143-146; products from agricultural, in international trade, 146-148; mineral, 148-157; exploitation of mineral, 149-150; national development and, 150-152; distribution of world mineral, 152-157; of minerals essential to industrial power, 154-155; position of nations with respect to mineral, 155-156; regional concentration of mineral, 156-157; and interdependence of nations, 157-158; mobility of, in domestic and international trade, 179; and free trade, 234-235; the tariff and conservation of, 240-242
- Negroes in the United States, growth and distribution of population of, 94-96
- Netherlands, and overpopulation, 80; and international trade, 165, 166, 257
- OHLIN, B. G., cited, 14 *n.*, 76 *n.*, 81 *n.*; report by, quoted, 16 *n.*, 79 *n.*, 85 *n.*
- Optimum, theory of population, 37; theory of income, 38-39; defects of per capita real income as a measure of, 38-39; theory of welfare, 39-40; appraisal of theories of, 40-42; limitations of, theories, 40; utility of, theories 41-42
- Overpopulation, and territorial expansion, 79-85; population density not evidence of, 80; fallacy of colonial expansion for, 80-82; and imperialistic expansion, 82-83; and expansion into empty lands, 83-84; alternatives to colonial expansion due to, 85-90; and social control of population growth, 86-87; and industrial expansion, 87-88; development of secondary industries and international trade as a solution to problem of, 88-90; *also see* population

PAUPER-LABOR ARGUMENT, fallacy of protectionists, 262-269

Penrose, E. F., quoted, 6 *n.*, 15 *n.*; cited, 33 *n.*, 39 *n.*, 76 *n.*, 82 *n.*

Percentum Limit Act of 1921, 128

Population, disparity in distribution of resources and, 8-9; migration of, 9-10; flow of capital and migration of, 10, 11; hindrances to migration of, 12-13; problem, 23-24; Malthus and the study of, 24-25; Malthusian principle of, 26-27; relation of, to food supply expressed by Malthus in geometric and arithmetical ratios, 27-28; criticism of Malthusian geometric ratio of increase in, 28-29; preventive check advocated by Malthus on growth of, 30-31; Malthusian doctrine on positive checks to growth of, 31-32; ineffectiveness of preventive checks on growth of, 32; Malthusian pattern of growth of, 34-36; optimum theories of growth of, 36-42; natural and social theories of, 36-37; growth of world, 43-73; as a dynamic force, 44-46; slow rate of growth of, prior to Industrial Revolution, 46-48; growth limited by fertility and mortality, 47; character of growth of, in

western world, 48-51; of Europe and America since 1700, table of, 50; and birth rate, 51-54; and factors accounting for decline in birth rate, 54-58; decline in rate of natural increase in, 63-67; table of rate of natural increase in, 65; growth in, outside of Europe, 66-67; importance of age composition in growth of, 67-69; and gross reproduction rate, 69-70; and net reproduction rate, 70; approach to stationary or declining, 70-71; new orientation of problem of, 71-73; distribution of world, 74-90; volume of migration and distribution of world, 75-78; movement of, in temperate zone, 76-77; movement of, to Asia and Africa, 77-78; character of recent European movement of, 78; territorial expansion and, pressure, 79-85; density of, not evidence of overpopulation, 80; pressure and fallacy of colonial expansion, 80-82; pressure and imperialistic expansion, 82-83; pressure and expansion into empty lands, 83-84; pressure and economic effects of capital exports, 84-85; alternatives to colonial expansion due to, pressure, 85-90; social control of growth of, a possible solution to problem, 86-87;

industrial expansion a possible solution to rapidly growing, 87-88; development of secondary industries another possible solution to problem of rapidly growing, 88-89; international trade as a substitute for migration of, 89-90; contribution of science and invention to agriculture and pressure of, 145-146; agricultural commodities in international trade and pressure of, 146-148; international economic relationships and movement of, across national frontiers, 173

Population in the United States, 91-112; record of growth of, 92-94; growth of negro, 94-95; distribution of negro, 95-96; growth and distribution of foreign-born, 96-97; distribution of, 97-105; table of distribution of, in rural and urban communities, 98; and Westward Movement, 98; exodus of rural, 99-101; analysis of urban growth of, 101; geographic shifts in distribution of, 102-103; distribution of native, 103-105; age composition of, 105-112; proportional changes in age groups of, 106-108; chart of percentage distribution of, by selected age periods, 1850-1980, 107; dis-

tribution of, by age groups and regions, 108-110; distribution of, by age groups and size of community, 110-112; factors producing changes in, 113-131; increase in births as a factor in growth of, 114; decline in birth rates and growth of, 114-116; and birth-rate differentials, 116-118; and social significance of group differentials, 118-122; regional variations in reproductive trends of, and regional variations in level of cultural-intellectual development, 119-121; variations in cultural-intellectual levels among social classes of, 121-122; death as a factor in producing changes in, 122-125; and trend of births and deaths, 126-127; immigration as a factor in producing changes in, 127-131; volume of immigration included in, 127-129; net immigration and annual natural increase of growth of, 129-131; chart of growth of, from natural increase and net immigration, 1910-1931, 130; estimate of future growth of, 131-135; chart of, 1790-1980, 133; economic consequences of decline in growth of, 135-139; probable readjustments in specific industries resulting from decline in rate of growth of, 136-

- 138; and a change in social outlook, 138-139
- Pork barrel, the corrupting influence of the, an argument for free trade, 232-233; and Trade Agreements Act of 1934, 272-273
- Portfolio investments, 169
- Production, introduction to movements of primary factors of, 6-12; significance of movements of factors of, 9; obstacles to movements of factors of, 12-14; factorial movements of, as adaptations to economic conditions, 14; trade as a substitute for movement of factors of, 15-16; and social theory of Malthus, 33; and optimum theories, 40-42; industrial expansion to stimulate, one solution to population problem, 87-88; development of secondary industries of, another solution to population problem, 88-89; adjustment of costs of, within a country, 181; adjustment of prices and costs of, between different countries, 182-183; of goods at a comparative advantage and international trade, 183; an illustration of the, of goods at a comparative advantage, 183-187; specialization of enterprises increases efficiency of, 189-190, 230-231; international trade under gold-standard conditions and costs of, 194-200, 208; international trade under inconvertible paper money standards and costs of, 201-206, 208; and changes in comparative advantage, 210; the tariff and an excise tax on domestic, 215; effect of a tariff on, 218; and national self-sufficiency, 251-252; money costs of, and the pauper-labor argument for protection, 264-267; and wages, 265
- Protection, tariff for, 215-220; and comparative advantage, 216-218; and monopoly, 216-217; and productivity, 218; and employment of labor, 218-220; similarity of subsidies and bounties to a tariff for, 220-221; corrupting influence of, on political life of nation, 232-233; and international ill will, 235-236; arguments for national self-sufficiency and, 236-269; alleged economic advantages of, 237-253; infant-industry argument for, 237-240; conservation of natural resources and tariff for, 240-242; as a means of preventing overspecialization, 242-244; against dumping 244-245; and a controlled economy, 245-253; alleged political and social advantages of, 253-261; and military self-sufficiency, 253-256; nonrational arguments for,

- 261-269; the pauper-labor argument for, 262-269; *also see* tariff, subsidy
- QUOTAS, on imports of goods, and international commercial policy, 223; exchange, 223-225
- RATIO OF INTERCHANGE, in international trade, 192-193
- Reproduction rate, gross, 69-70; net, 70; decline in net, in United States, 116-117; table of, for classifications of white population by size of community, 117
- Resources, *see* natural resources
- Rogers, J. H., quoted, 233 *n.*
- Rural communities, distribution of population in, 97-98; exodus from, to cities, 99-101; and native white stock, 104-105; composition of, by age groups, 110-111; and burden of child education and welfare, 111; fertility rates in, in United States, 116-118
- Russia, high birth rate of, 53-54; and mineral resources, 156; and international trade, 164; and a policy of national self-sufficiency, 247-248; and military self-sufficiency, 254
- SAMPSON, EDWARD, quoted, 152 *n.*
- Services, international economic relations and furnishing of, by citizens of one country to those of another, 173; exchange of goods and, in international and domestic trade, 177-178
- Short-term capital, 171-173; and international trade, 171; and speculation, 172; and political uncertainty, 172; and breakdown of gold standard, 172-173
- Simonds, F. H., and Emeny, B., cited, 150 *n.*
- Social Security Program of old age pensions, and composition of population by age groups, 111-112
- Span of life, the, 64
- Subsidy, in an international commercial policy, 220-222; similarity between a protective tariff and a direct, 220-222; a matter of budgetary record, 221; cost of, paid from general taxation, 221-222; corrupting influence of, an argument for free trade, 232-233; and standard of living, 267-268
- Subsistence, Malthusian theory of relation of population to, 26-27; Malthusian geometric and arithmetical ratios expressing relation of population to, 27-28; criticism of geometric ratio and level of, 28-29; criticism of arithmetical ratio of increase in, 29-30; Malthusian doctrine of positive checks on popu-

- lation growth and, 31-32; and Malthusian pattern of population growth, 34-36; criticism of Malthusian doctrine of relation of, to population growth, 142-143; and contribution of science and invention, 143-146; and agricultural commodities in international trade, 146-148
- Sweden, birth rate in, in 1931, 53; and death rate, 59; birth rate in England compared with birth rate in, 68; and net reproduction rate in 1933, 70; and mineral resources, 157
- TARIFF, the, 213-220; nature of, 213-214; for revenue, 214-215; and demand, 214-215; and an excise tax on domestic production, 215; for protection, 215-220; and comparative advantage, 216-218, 267; and monopoly, 216-217; effect of, on production, 218; and employment of labor, 218-220; direct bounty or subsidy and a protective, 220-221; laws of 1909, 1922, and 1930 concerning nondiscriminatory treatment, 228; the corrupting influence of a protective, on political life of nation, 232-233; and international ill will, 235-236; arguments for national self-sufficiency and a protective, 236-269; and infant industries, 237-240; and conservation of natural resources, 240-242; of protection as a means of preventing overspecialization, 242-244; and dumping, 244-245; and a controlled economy, 245-253; alleged political and social advantages of a protective, 253-261; and pauper-labor argument for protection, 262-269; problem of reducing American, 269-275; and Trade Agreements Act of 1934, 271-275; *also see* protection
- Thompson, W. S., quoted, 54 n., 65 n.
- Thompson, W. S., and Whelp-ton, P. K., quoted, 97 n., 106 n., 108 n., 130 n., 132 n.; cited, 131 n.
- Trade, *see* domestic trade, international trade
- Trade Agreements Act of 1934, 271-275; and determination of individual duties, 272-274; progress of program instituted by, 274-275
- UNITED STATES, birth rate in, in 1931, 53; reduction in infant mortality in, 60; and rate of natural increase in population, 66; immigration into, from 1821 to 1920, 76; population in, 91-112; record of population growth in, 92-94; growth of negro population in, 94-95; distribution of negro population

in, 95-96; growth and distribution of foreign-born population in, 96-97; distribution of population in, 97-105; rural and urban population growth in, 97-101; geographic shifts in population distribution in, 102-105; age composition of population in, 105-112; age as a factor in producing population changes in, 113-118; death as a factor in producing population changes in, 122-125; immigration as a factor in producing population changes in, 127-131; volume of immigration to, 127-129; immigration restriction policy in, 128; annual natural increase and net immigration in, 129-131; estimate of future growth of population in, 131-134; economic consequences of decline in rate of population growth in, 135-139; and mineral resources, 155-156, 157; and international trade, 163, 164, 165, 166, 167; long-term investments of foreigners at end of 1936 in, 170; and most favored nation treaties, 227-228, 271-272; and experience with infant-industry protec-

tion, 239; and a policy of economic nationalism and self-sufficiency, 250-252; and problem of neutral rights and national interest, 256-258; pauper-labor argument for protection in, 262-269; and effects of Hawley-Smoot tariff of 1930, 270-271; and Trade Agreements Act of 1934, 271-275; and nations that have entered into trade agreements, 274-275

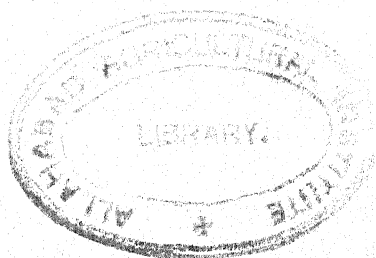
United States Department of Commerce, cited, 170 *n.*

United States Tariff Commission, and the Trade Agreements Act of 1934, 273-274

Urban communities, distribution of population in, 97-98; exodus of farm populations to, 99-101; analysis of growth of, 101; and native white stock, 104-105; composition of, by ages, 110-111; fertility rates in, in United States, 116-118

VAN VLISSINGEN, F. H. F., cited, 274 *n.*

WALLACE, Secretary of Agriculture, quoted, 251



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The text of the book was set on the linotype in Granjon type, named purely out of compliment to Robert Granjon, a sixteenth century typefounder and printer. George W. Jones designed this type, neither copying a previous face nor creating a new one. The characteristics of the letters follow more closely a type used by Claude Garamond, a French craftsman, than do the numerous adaptations of types named after him. Granjon type was introduced in England by Linotype and Machinery, Limited, in 1926 and its obvious merit was quickly recognized there as well as in America.

Choice of Granjon type for this book, using the twelve point size, aims toward a page easy to read and pleasant to look at, with headings and subheadings in simple unison with the text.

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